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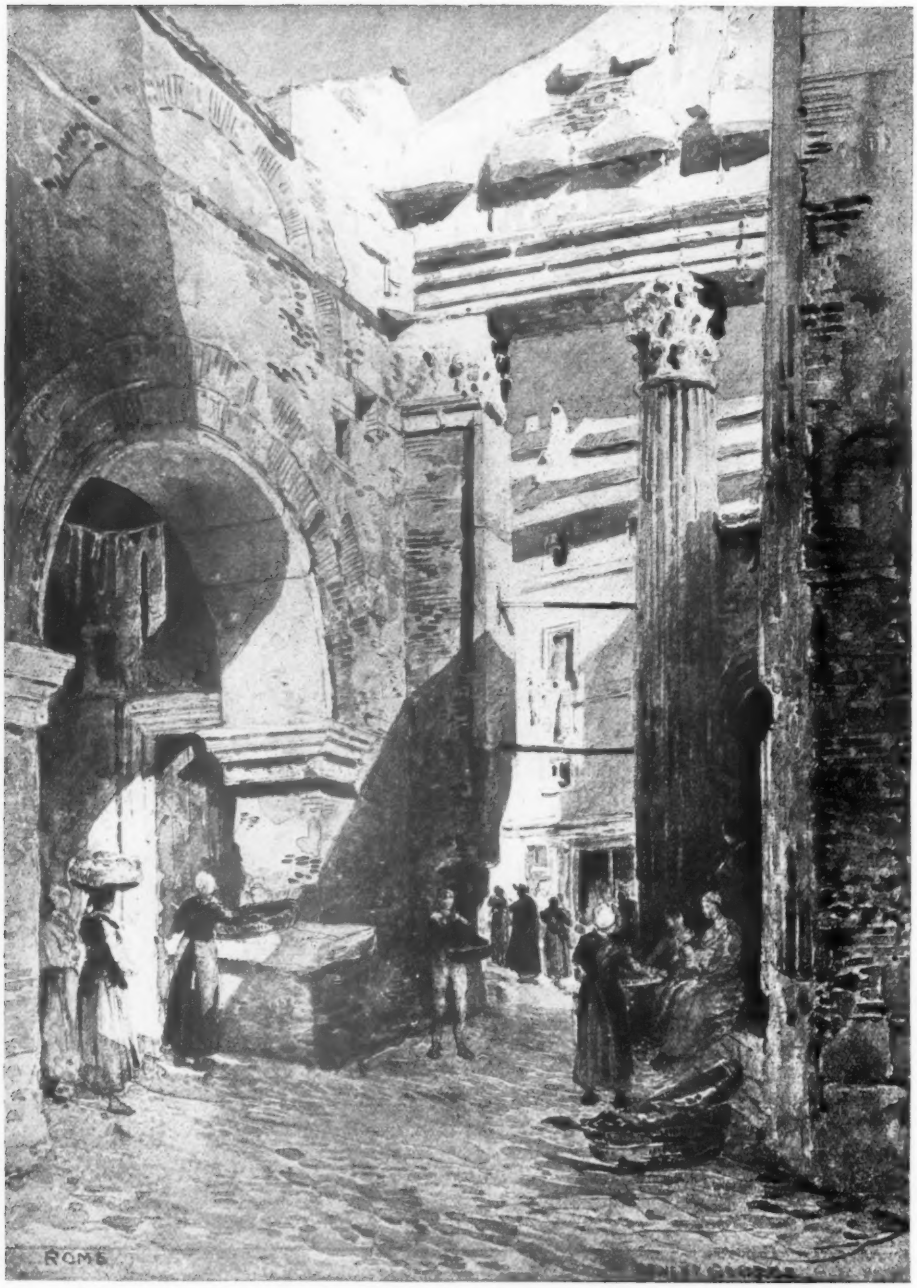

ROME

From a Water-Colour sketch by Sir Ernest George, R.A.

R.I.B.A. Collection

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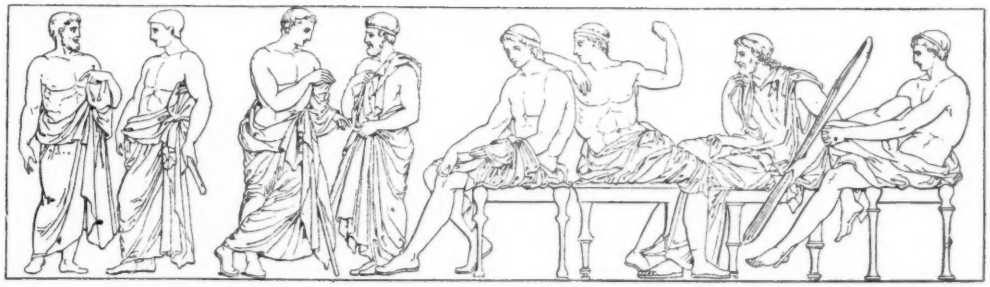


Recent Excavations at Ur

[*A Paper read before the Royal Institute of British Architects on Monday, 26 May* 1930.]

BY C. LEONARD WOOLLEY, M.A., HON. ASSOCIATE R.I.B.A.

IT would be very easy for me to give a lecture dealing entirely with the contributions to art and to history which have resulted from our work at Ur, but before this audience, and in my official capacity, as I may say, as an Honorary Associate, I have felt it to be rather my duty to dwell at greater length on the architectural discoveries which have been made in the course not only of the last winter, but during the last eight years. I certainly propose to deal more with recent discoveries, as announced, but I shall have recourse to earlier finds in order to make good certain arguments by which I hope to convince you that, from an architectural point of view as well as from many others, the excavations at Ur have been of prime importance.

I shall begin with something which does not look architectural or interesting. The main object of all our work is, of course, history, history in all its phases and branches, and that is not easy to secure. In recent seasons we have been amazingly lucky in finding in the Royal Tombs of the prehistoric kings treasures of gold and silver and stone unequalled for their age and artistic merit in any other country. I do not say that at a later period you do not get finer things, as in Egypt; but taking into consideration date and quality, Ur is given extraordinary pre-eminence by its finds. But all these things are comparatively valueless unless we take them in their true perspective and historical sequence where dates are lacking. Last winter we were most fortunate in gaining evidence which puts into proper perspective all the discoveries of recent years.

So I shall begin by showing you what may look queer but what I hope you will eventually find to be absorbingly important.

Here is a section of the pit which was dug by us last winter (Fig. 1). Our object was to go back to the beginnings at Ur of the Chaldees. We selected a part of the city site where denudation by the weather had had great effect. All the later buildings in this area had been swept away by wind and rain, and the ground level was that of 3200 B.C. From that level we dug down to a depth of 61 feet. This is not an imaginary section, it is not schematic, it shows what was found to exist, and most of the evidence can still be seen *in situ*. Working from the bottom upwards, you see here the sea level. You do not get below that level any trace of human occupation, but you get hard green clay with the brown stains which represent the roots of marshy plants. Above is the soil formed partly by mud collected round the stems of reeds, partly by the decay of the reeds themselves. In this deposit there is broken pottery. There was, rising out of the primitive marshes which were Mesopotamia, a small island where there was already a settlement. We have dug on the outskirts of that island, and the pottery represents the household débris which was flung into the marshes round about the dwellings. The formation of the organic soil by

decayed reeds gradually raised the level until it rose above the level of the sea, and land was formed, and immediately afterwards men moved their settlements down on to the new ground. The next deposit is composed of household refuse, ashes, broken pottery, etc. At this end we could

stems—that is to say, it was the clay plastering of a reed hut which had been accidentally burned. Even from the fragments we could see the form of construction, and it was that in use at the present day by which reed stems are bound into fascines, and these are planted upright into the soil, and

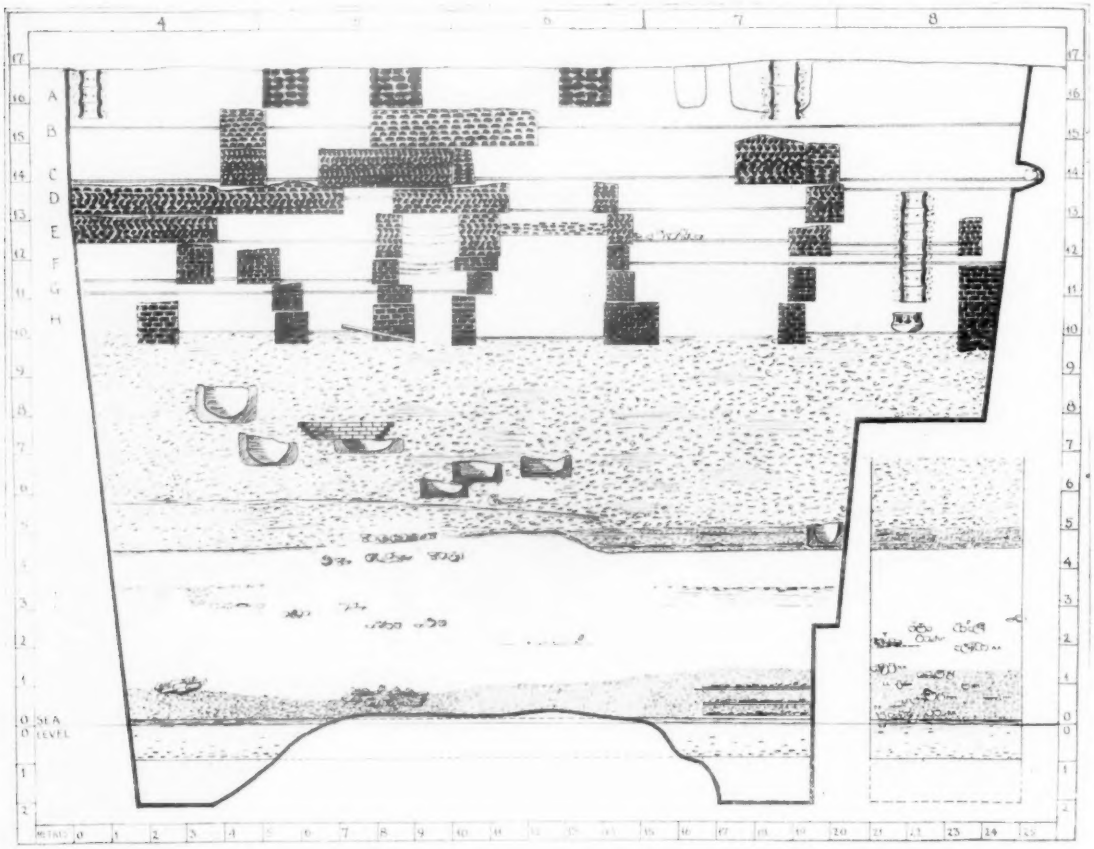


Fig. 1.—Section of Pit Cut Down to Virgin Soil through Sand Deposit

distinguish in that deposit, which attains a thickness of 6 feet, three floor levels of beaten clay. Here a more interesting discovery was made. We found across our pit a mass of fragments of clay, burnt accidentally, so that the lumps were black and red and hard. Each piece was smooth on one side, flat, convex or concave ; on the other side it bore deeply impressed the marks of parallel reed

between them are stretched mats. Usually, nowadays, they are plain woven mats, but here they were palisades of vertical reed stems, which must have been tied together by string. That mat is found among present-day Arabs. Over that reed structure was plastered mud, as at the present time. But the primitive builder of Ur was careful to preserve the constructional features

of his house, and, as we see from the clay lumps, fascines in relief formed half-columns against the hut surface and the wall. And we see here some feeling for architecture at a date which is literally antediluvian. And I use the phrase advisedly. Above the collection of household debris there is a heavy stratum, 11 feet thick, of clean sand, water-borne and deposited from the actual Flood of Sumerian legend, which legend, of course, is at the bottom of the story of Noah. Therefore, we are dealing with antediluvian remains; and here we have the hut dwelling which we should expect, because in the Sumerian story of the Flood, the god who warns Uta-Napishlim of its coming, hesitating to betray the secret to a mere man, prefers to tell it to the house, and whispers to the house wall " Reed hut, reed hut, hear me ! "

Elsewhere in the stratum we have evidence of a higher civilisation in the shape of a fallen piece of wall built of good moulded mud bricks; they were accidentally burned in part and kept their shape and form, but originally they were unbaked bricks. They showed that civilisation had reached a point where, side by side with daub and wattle work, you get definite building with moulded bricks. Over the whole of this occupation level lies the great Flood deposit, rising 11 feet. Dug down into that was a certain number of graves of people who lived immediately after the Flood. They were culturally of the same kind as the people who lived before it; they were clearly survivors of the disaster. And in those graves we have many objects which throw light on the lives of the pre-Flood people.

Here is a photograph of the moulded bricks: they are flat-topped bricks, measuring 11 inches by 5 inches by 2½ inches; I think you can distinguish in the photograph the difference in the colour of the soil: below is the black house refuse of the habitation level, and above the bricks is the clean sand brought down by the deluge.

Here is one of the graves of the people who lived immediately after the Flood, dug down into the clean sand. The body was laid out at full length; but in the whole of the rest of the history of Ur, or of Mesopotamia, from nearly 4000 B.C. on to 600 B.C., we have no single instance of a body laid out at full length; the dead are always laid on their side in the attitude of someone falling asleep. But here is a different ritual of burial: the man is extended rigidly, and his hands are across his pelvis. At his feet are put pots with the offerings for the soul of the dead, showing that there was, even then, a belief in the future life. And these pots are not like anything which we find at a higher level. Pottery is very important, there is so much of it, and it is very significant. It may be crushed and broken, but it seldom decays. Here we are dealing with what we call al'Ubaid pottery, vessels made not on a wheel but by hand, of white or green clay, decorated with black paint. In the earliest period, before the Flood, the ornamentation of the pottery is very elaborate, and extends over the whole surface of the vessel: after the Flood, however, people seem to have lost heart, and so the decoration becomes much simpler; finally it dies out altogether. In the next age the wheel is introduced, and with the introduction of machinery the man's delight in his own handicraft seems to have gone, and the pottery degenerates.

This is post-diluvian ware. Here is a vessel with spout and handle, like a teapot, and here a bowl whose inner face is corrugated before baking, so that you can grind in it the boiled barley, which was then, as it is now, one of the staple foods of the people. Here are two figures which were found in these graves (Fig 2). Similar figures were found in the house level of the Flood deposit. They are unlike anything else, in Mesopotamia or elsewhere. They are always female, always nude, and there are two types: one with the hands on the hips or the sides, and the other nursing an infant. The bodies are reasonably well modelled, rather graceful than otherwise, showing in the artists a distinct observation of nature, in contradistinction to the heads, which are bestial. You would hardly imagine that the man who did so well with the body could not have done better with the heads. They are more like the faces of tortoises, with grotesque domed heads wearing head-dresses made of bitumen. Surely these figures are intended to represent not women, but goddesses or demons, and afford definite evidence of the existence of a religious feeling in the antediluvian people. And in that case, if I am right, they have extraordinary interest, because in the royal cemetery of a thousand years later religious emblems are very rare, and it is only when we get back to this earliest period of occupation that we find that the first settlers who came from the prehistoric uplands of Asia into the newly formed river bank brought with

them something in the nature of a religion, with a definite conception of what Deities might be. Here is an example of a female figure holding a child, and I think you will agree, especially if you see what the head of the child is like and the way it grasps the mother, that it represents a very modern tendency in sculpture.

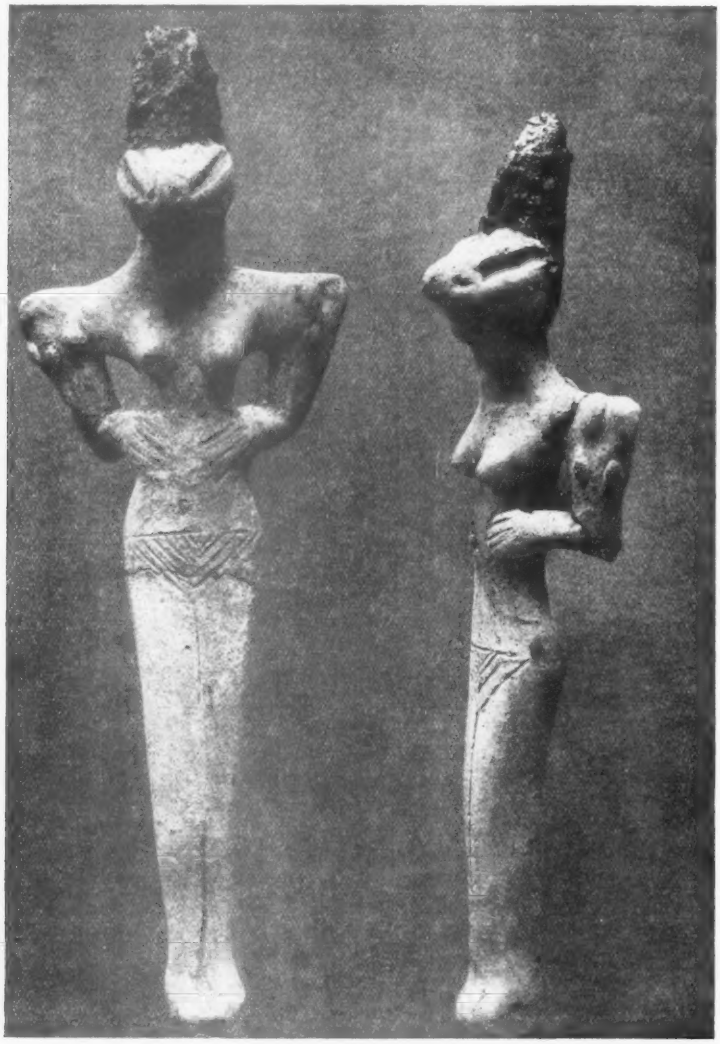


FIG. 2.—CLAY FIGURES FROM GRAVES OF THE SAND PERIOD

Above the sand of the Deluge there is a very heavy deposit almost entirely composed of pot-sherds and grey ashes ; it was refuse thrown out from a potter's factory, and in it we found kilns at different levels. Above that there were eight definite building levels, all with good mud floors and heavy walls, sometimes as much as 14 feet thick, of mud brick. Here was a new point in Mesopotamian archæology. It had been supposed until recently

that the earliest bricks in Mesopotamia, and some of the earliest in the world, were plano-convex. We have found that they were not the earliest, but men invented flat, square bricks before they started making these awkward shapes. The bricks of the pre-Flood level were square, and the bricks of which the kilns are made are also flat-topped. A certain number of bricks in the last stratum are made of cement. At the seventh level from the top the bricks were square and small and neatly made, and the pottery had changed, the black-and-white types giving place to a brilliant ware, painted in red, black and cream colour. Further changes came in the upper levels ; bricks were plano-convex, and and in the top two strata we were dealing with pottery which might have been found in our royal graves.

Here is one of the kilns, and you can distinguish the circle of brickwork, and in it a large batch of pots in situ as they were left by the potter for baking. And here, found at almost the same level, is the earliest piece of stone sculpture we have found. This wild boar shows that art is no new thing for these people ; note even the wrinkling of the upper lip over the tusk, which is most effective. The figure is only small, 5 inches in length, and, as the grooves in its sides show, was a decorative utensil rather than a work of art pure and simple ; but all the more does it show that a very high level of culture existed at that time.

Here is one of the floors on our fifth out of the eight levels found ; it illustrates how clear the archæological evidence is. It is a floor of trodden clay 6 inches thick. All the pottery on it is necessarily dated later, and everything under the floor is necessarily earlier. With such well-defined divisions there can be no mistake about the date : it is true you cannot fix things by years, but you can get a definite and positive scheme or sequence of chronology.

Here is a characteristic piece of walling, also in the fourth period : the bricks were of mud, unbaked and round topped, and laid in the wall, not flat but herring-bone fashion ; such herring-bone walling becomes almost a criterion of date, because by 2300 B.C. that custom had died out.

And here, coming from the second level and pointing to a certain degree of culture, is one of the drains, of which we found many, with the drain-pipes sloping through the soil and coming through the house wall, and the horizontal drain giving into a vertical pipe which goes down 25 feet into the ground. That drain pipe and system must have dated from, at the latest, 3400 B.C.

I have dealt with only one pit, dug in the habitation area—that is to say, the town. Now I show you a section of the soil outside the early settlement, a section cut through the tomb area. The graves in the early period were made in the waste ground outside the city, and here is a section, measured in every detail. There is the soil still visible, forming a vertical wall at the end of the great excavation in which we have found our main cemetery. It is of great value because of its dating evidence. At the bottom we have one such grave as was found in the Flood deposit, and here and there we found in the soil graves which are, roughly, contemporary with the kiln stratum in the section shown last, and with that immediately above it ; practically the period of the sculpture of the wild boar. It is all made of rubbish flung out from the ancient city, and therefore there is a definite talus running down the hill. Halfway up is a stratum containing a mass of clay-written documents and of jar-stoppers with seal impressions ; such correspond roughly to the sealing wax impression on the tops of our wine bottles, but in this case they are made of mud. These things could be dated approximately on the ground of their writing, etc., at about 3750 B.C., in round figures. Above this stratum we have a broad belt of refuse within which lie all the graves of our great Royal cemetery.

After the stratum of 3750 B.C. rubbish was flung out one had to wait until the soil, by further rubbish-throwing, had reached this much higher level, which would take some time. Then the graves began to be made, and we are not far wrong in saying that the earliest graves of our Royal cemetery go back to 3500 B.C. Higher up still is a stratum containing further dating evidence in the shape of inscriptions and seal impressions. The Royal cemetery lies between these two strata.

Here are examples of written documents found in the big stratum 3750 B.C. They are not the earliest documents known in Mesopotamia, but they are very early. And the writing is semi-pictorial. Here are remarkable designs of the linear type, very elaborate and unlike anything else we know in the later art of Mesopotamia, but closely connected with the early seals and seal impressions from the Persian uplands at Suza, showing that we have Persian connections influencing the civilisation of this valley.

Here is another characteristic example from this

level, where the linear designs are complicated by the introduction of actual syllabic signs, some of which can be identified as the later signs of the Babylonian language, but others are obviously foreign.

From above our cemetery we got some seal impressions such as this. It gives the name of Mes-anni-padda, King of the First Dynasty, the first Ur ruler, and others give the name of his wife. We can date these to 3100, and so confirm the theory I put forward three years ago, which has not been invariably accepted by my associates, that the Royal cemetery dated between 3500 and 3200 B.C.

I might be asked, " What has this to do with the subject of architecture ? " I want to put things in perspective ; and here you have evidence for dating the cemetery, in which architectural discoveries of great importance have been made. I shall not describe the art objects, but I show you here a photograph of one of the Royal tombs. It is an early example ; it is dangerous to speak in terms of years, but one might say 3400 B.C. or thereabouts. It is built entirely of stone, rough quarry rubble, but it was originally coated over with a fine cement, which hid the roughness of the work. It was underground, where one would not expect careful workmanship. But the floor was practically polished when it was first made, and the walls were equally smooth. The roof is pure corbel vaulting in rubble. One might expect that in many countries and at many periods. In another grave, probably of rather later date, there is a change. There are three chambers, all built of stone ; the roof is half-way between the corbel and the vault, and the stones overlap, but as they rise towards the top they are tilted forward, and there is in the centre a keystone rather than a cap, so, clearly, progress is being made.

Another Royal tomb close by has a roof of burnt brick, and it is a true arch. The bricks are not moulded, the effect is given by radial mortar lines ; but the top of the tomb was roofed in with a series of ring arches. And that is not all. The chamber as built in stone was square, a rough pendentive turned that into a curve, and the end of the roof had a half-dome. This may date to 3300 B.C., or thereabouts. And while the evidence given by that was, I think, absolutely convincing for the dome as well as for the standing arch, yet if further proof were needed we had it in the tomb here, where a stone dome, built with pendentives, was found absolutely intact. An interesting feature was that there were holes in the masonry for timber. The builders, as they brought their roof in towards the centre, got frightened—the building of a dome must have been new to them—and they laid stout timbers across the opening, then planks, and put over the planks a mixture of mud and light straw, and got in that way the centring for the stone work, which stands well at the present day. We found the woodwork fallen under the dome decayed to dust. Here is a plan of the centring itself.

As to the walls of these tombs, a pit was dug to take the building, and the stones being entirely rough, they were built in a manner familiar to most of you, in a caisson. They put planks parallel to and at a certain distance from the earth sides of the pit, arranged the layer stones, and poured in mud and small rubble, then took the planks away. So a concrete building was familiar to the builders of Ur in the Third Millennium before Christ.

It is surprising that these methods of roofing were known so early. That they were not forgotten is shown by this photograph, which gives a doorway dated 1900 to 2000 B.C. A long time has passed since the tombs, but it is clear that the brickwork in the doorway is a fallen arch. It was made more certain because the walls were burnt brick at a height of 4 feet, and above that they were of mud brick and were still standing 10 feet high ; and yet in the doorway there were these burnt bricks. The only explanation was that they had come from the arch over the door. But they preserve their shape, and the radial mortar between the bricks could be measured, and gave the right curve for the aperture of the door.

Taking it a stage farther, here we get a building of 1400 B.C., with the arch still standing above the ground. You will be more interested to see the drawing of it. Arches occur regularly in buildings of this late Babylonian age, showing that never throughout all Mesopotamian history, from the Fourth Millennium to the time of the Greeks and the Romans, was the use of the arch forgotten ; and as we have the dome as well as the arch, we could argue that the dome was not forgotten either. So in this ancient Euphrates civilisation we see the origin of these architectural features which were strange to the Greeks and the western world until

Alexander invaded the country and discovered the ancient practice of its inhabitants, a practice which was eagerly taken up by the artists and architects in Alexander's train, and carried over by them into Europe. Nobody imagined that the arch and the dome had been employed so early. It has enabled us to reconstruct various buildings on lines which we should not have adopted a few years ago.

Here is a reconstruction of a small Temple of 1400 B.C., and it shows the free use of the arch and dome. Looking at the ground plan, any architect would be convinced that the reconstruction is correct. Take the central chamber, with the inordinate thickness of its walls, which makes one think the builders were not happy about their domes ; I think no other interpretation is possible. It was not used invariably ; the flat roof was common. Here is a reconstruction of a private house at the time of Abraham, 2000 or 1900 B.C., with central court and staircase going up to the upper chambers, which could be entered from a wooden gallery running round the courtyard. The roof drained inward, with gargoyles or gutters from which the rain drained away into the court-yard. The idea of there being a second floor to a private house in 1900 B.C. was heterodox, but every evidence confirmed it. Thus the court-yard was paved with brick and had a drain in the centre. The lips of that drain had broken away, and a new owner had laid another lot round the drain opening, but not over the whole of the court-yard. Water falling round the sides could not get into the drain to run away, so water did not fall there ; the drain served water coming from above into the middle of the court.

Towards one corner of the court we find a burnt brick bedded on to the pavement with good clay, and round it fragments of burnt wood. I concluded we had there the support for a wooden upright holding the gallery. The argument for that is—as anybody who knows the Near East will agree—that if a Near East carpenter had to cut four uprights, one of them would be shorter than the other three and would need to be jacked up. Putting other posts in corresponding positions, we found that they agreed and they gave us a gallery three feet wide, and this supplied the reason for the staircase, which was found standing up to six feet. When the reconstruction had been worked out, on most unorthodox lines, we discovered a written tablet of the same period. Some of the references were to buildings, and one said that rooms opening out from each other were unlucky, and rooms, to be fortunate, must open on to the courtyard. And here the only way you could avoid their opening out was to have a gallery running out of the courtyard itself ; and I think we were fully justified by the evidence of the contemporary author.

The question of roofing is always with us. In one of the houses contemporary with that I showed you a reconstruction of just now we found two square brick pillars in the back court, which certainly held up either a balcony or an upper storey which had an open space below it.

To take this point a step farther I show you here a plan of a temple which we found last winter ; it is Neo-Babylonian, 600 B.C. ; it is simple and orthodox. In the forecourt we found a few courses of masonry, which I supposed to be the lower part of a table of offerings, a narrow bench, on which the people coming to the Temple would dedicate the offerings they made to the god. I was content with that explanation until we came to another building of the same date in which we had a similar burnt brick structure. This is a Temple built by Nebuchadnezzar. The entrance to the Temple itself is from the side corridor, there is an outer court, an antechamber, a Holy of Holies, and behind that the chamber where the priests went to work the oracle. If you look at it by this plan you will agree it harmonises with the ground plans of other temples. But it is astonishingly well preserved, and the walls stood 20 feet high ; and what on the plan looks like an altar is seen to be a lofty pillar of brickwork intended to support the roof, and what I should have supposed to be a table of offerings was a high screened wall in front of the door of the antechamber ; which also may have supported the roof, because I can think of no other purpose for it. And that is of further interest as throwing light on the use of the pillar in Mesopotamian buildings. This Temple was discovered in the last week of our season ; it was a big job to dig out the 20 feet in a week, and it was clear that if we did so it would be reburied by drifting sand before we returned in the autumn, because it lay in the full track of the winds. Therefore, as we dug it out we roofed it in. So we had a fine building roofed and extraordinarily well preserved ; the mud plaster remains and even the whitewash on the walls ; one can go down there

and almost imagine that the temple had never been destroyed.

Another discovery made this year was of great importance because it touched on another disputed point in Mesopotamian archæology, especially on its architectural side. There has been a curious " bee in the bonnet " of architectural writers and archæologists about the use of the column in Mesopotamia, and every authority I know has strongly denied that the column was ever used by Mesopotamian builders until the Greek period. At Nippur the American Expedition forty years ago found a columnar building which was claimed to be of the date of about 1400 B.C. ; but the head of the Expedition, a German, ruled it out—without having seen it—and said the column dated from the Greek period. The French, not far from Ur, found a column of moulded bricks which certainly dated to 2400 B.C., and then the archæologists and architects said it looked like a column and was an imitation of one, but was not a column, because the column was not known ! Dr. Hall, digging in 1919 at al'Ubaid, and later I myself, found there columns of wood overlaid with mosaic in mother-of-pearl, black stone and red, and there could not be any doubt, except in the mind of one German, who said they were not columns, but door-jambs. But that is not in itself enough, because the building dated from 3100 B.C. and the use of columns might conceivably have been dropped later. This year we found a building of about 2300 B.C.—that is to say, of the best building period of Ur, in which was a column, the lower part of the column made of bricks, segmental and moulded, resting on a burnt-brick base. I got some of the German excavators over, and they looked at it, and they said, " Though it looks like a column it might be the base of a statue or anything else." Mr. Whitburn pointed out to them that the column was equidistant between two mud-brick walls, on which were projections in the form of pilasters, and therefore we had to deal with something like a temple *in antis*. That is a new discovery, and shows that in 2300 B.C. the column was employed as a feature of architecture.

As I have touched on the architectural merits of the 23rd century, I show you a reconstruction of a familiar Ur building, namely, the great Ziggurat, and will tell you something about it which is not so familiar. Here is a photograph of the back wall ; there is not a single straight line in it ; the face is battered from base to summit, and the battered line is a slight curve ; and if you take the line from corner to corner it too is not straight but is curved outwards, on the same principle as the Parthenon. So that those theories of perspective or optics which have been worked out by the Greeks in the fifth century B.C. had equally well been worked out by the builders in brick in Mesopotamia 23 centuries before Christ.

At the end of the eight years of work we have been able to elaborate plans of at any rate the sacred area of the city, where the Temples lay, at different periods. Here are the buildings of 2300 B.C., showing the Ziggurat, the great Mannar Temple, the temple E-Mun-Makh, the temple of Nin-gal, the palace of the King (Fig. 3), and another building yet to be excavated. It is very interesting to take these plans and see how every important religious structure was preserved through the ages, but modified more or less by successive builders. They seldom deserted a site altogether, but generally left their hall-mark on its structure.

From 2300 B.C. we pass to 1400 B.C. The great courtyard has been enlarged in front, and the large Temple of Nin-gal has been in part replaced by a new building.

And, finally, we come to the late Babylonian period, when Nebuchadnezzar built his great wall round the sacred area. And though many of the buildings have disappeared owing to denudation by wind and rain, we have the Ziggurat there and other buildings, showing modifications which have been wrought in place in 1700 years.

At the end of this season at Ur, visitors to the site had their most dramatic experience. From that roofed-in Temple of which I showed you the photographs, where they could imagine themselves living again in the age of Nebuchadnezzar, they walked across part of the sacred area and into the great pit and down a flight of 100 stairs, where they left dated history behind them, and, passing through the deposit left by Deluge, could take their stand on mud floors made by men who lived before the flood. It was a dramatic thing to do, to pass through so many centuries in a few moments and in a few footsteps ; that was the privilege of people who visited Ur, but it is not everybody who can go there. For those who remain at home and are interested in our work in its historical, architectural and artistic sides I think it is no less dramatic to

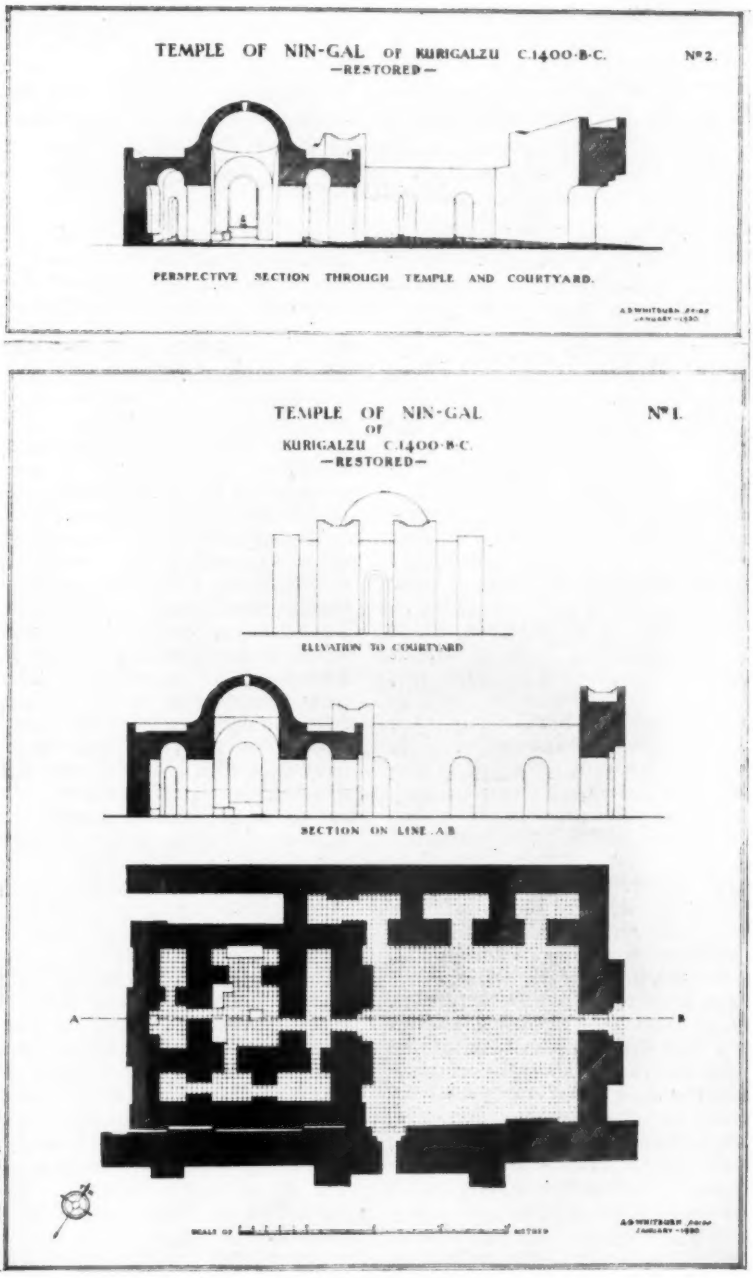


FIG. 3.—RESTORATION OF GROUND PLAN AND RECONSTRUCTION OF THE NIN-GAL TEMPLE OF KURIGALZU

be able to follow out, in plans and drawings and photographs and descriptions, the cultural vicissitudes of a people who lived so long, who invented so much, who preserved civilisation and handed it on to their followers, and have profoundly influenced our modern life. We can, more in detail than the visitor to the spot, observe the changes that they introduced, the inventions that they made, and the debt which they laid upon the shoulders of us, their remote descendants.

Discussion

Dr. J. W. MACKAIL [*Hon. Associate*], in proposing the vote of thanks to Mr. Woolley, said :—Owing to his extreme lucidity Mr. Woolley has made it possible even for the ignorant, the non-expert, to get some real grasp of what has been discovered at Ur, what it means, and the bearing of it upon history and upon a civilisation which has been continuous from 4000 B.C. or earlier until now. Perhaps most of us who are not engaged directly in archæological studies have been so fascinated, so dazzled, by the amazing discoveries made in the Royal Cemetery, that marvellous mass of beauty and design and cruelty, that we are apt a little to forget to enquire what the civilisation was upon which that splendour rested, and what those people were like. We are getting now, thanks to Mr. Woolley and his staff of collaborators, to know something about that. And the more we know, as usual, the greater is the limit of the unknown, which stretches onward and onward in front of us. It would have seemed incredible, only a few years ago, that we should have been able to reconstruct a civilisation to such an extent as we have been able to do, a civilisation anterior to all previous knowledge. It is possible that in a future generation even these discoveries may become antiquated, and that we may find that the history of the human race has been continuous not for six thousand but for twenty thousand years. Who shall say ?

Among the slides which Mr. Woolley showed us, and which specially interested me, were the linear seals with the marked Persian character of the ornamentation upon them. That is most interesting on this ground, that it shows the direct continuity of the whole motive and colour of Persian art from that time until now. And the other was, of course, the fresh light thrown upon the discovery and early development of the arch and its progeny, the vault. I suppose that the discovery of the arch was the greatest single discovery ever made in the art ; that it was made so long ago, and that it did not spread uniformly is surprising ; this last is a matter which calls for further investigation. There is no doubt the Greeks had every means of knowing all about the arch, and the vault also ; they had only to go an easy journey, as easy as it is now, and it was there before them. But there are strange " blind spots " in the human mind, strange periods of blindness or absence of the creative faculty in certain directions in human history and in the development of any nation or period of mankind. And the Greeks, more and more in the light of discovery, which makes their world so small a fraction of the greater world, are a puzzle in that they were so immensely clever and yet they stopped so short at certain points. The fact, as Mr. Woolley well showed, that the arch and the vault and columnar structure existed in Ur at that early date is in itself evidence that all these, and not the column alone, were within the Greek reach, and that there was no need for Alexander to conquer the Persian Empire in order that they should be introduced into the West.

We have not to-night been shown definite works of art to any extent, unless we include the little figure which shows the artistic conception of that time. I wonder what it was, and whether it had any religious significances ; or whether it was such a thing as would be in a jeweller's window in our time in Bond Street—simply an ornament. There is a tendency to make the influence of primitive religion spread much more widely over the whole structure of human life than it does now, and probably than it ever did, and to seek in all habits and customs certain religious or superstitious significances, and in all works of human artistry some connection with the religion of which we know nothing, except that we suppose they are instances of its action.

Dr. RAYMOND UNWIN [*F.*], in seconding the vote of thanks, said :—Mr. Woolley has brought before us, this evening, some very interesting features of our human intellect and of our human history. One of the things he referred to reminds me very much of a story which Edward Carpenter brought back when he had been visiting Ceylon. He had been to some very sacred pagoda, a pagoda which was supposed to be so sacred that it never cast a shadow. He was talking to the priest, and they were standing in what Edward Carpenter thought was the shadow of the pagoda, and he said to the priest " Surely, how can you say that the pagoda does not cast a shadow ? What is this ? " The priest replied, " Oh, that cannot be the shadow of the pagoda for the sacred pagoda casts no shadow." It seems to me that some of the German excavators were nearly as blind in their refusal to see evidence as was that priest. And I think that, too, illustrates what Dr. Mackail has just said, how curiously

we do develop along limited lines, and how blind we may be in other directions.

I can voice my thanks and your thanks to Mr. Woolley all the better in that I do not happen to be one of those unfortunate people who try to teach the history of architecture to students at a time when all the theories on which we have been brought up seem to be torn out by the roots by Mr. Woolley, and instead of the arch coming after the lintel, and matters of that kind, we now learn that the arch preceded the lintel by very many thousands of years. I really must commiserate with the poor people who have to teach the history of architecture on the confusion into which Mr. Woolley must be throwing them at the present time. I am glad I am free from that confusion and for that reason I am the more heartily able to thank him for his work.

It is very marvellous to be carried back through thousands of years: to see how the persistence of a tradition, which many have doubted, turns out to be based on fact, the tradition of the Flood. We realise how very careful we must be not only in what we accept, but in what we venture to doubt. A marvellous permanence and persistency attaches to the tradition of certain great events which have been handed down from generation to generation to an almost unbelievable extent, long before the time when these traditions were helped by any written history such as we have to-day.

Mr. A. S. WHITBURN [*A.*]: It has been my great privilege to work with Mr. Woolley as his architect at Ur. I have now been out with him for three seasons, and strangely enough, when Mr. Hall first kindly introduced me to Mr. Woolley, I had just returned from America, where I had been studying modern architecture in New York, so that my going to Ur meant a sudden change from the most modern to the most ancient city in the world. Of course, I expected to find things very different, but in several respects found them very similar.

This, I know, sounds rather far-fetched; but the tendency in New York to-day is to use stock bricks for the modern sky-scrapers, with a very plain recessed ornament running from top to bottom; and at the first Temple I surveyed at Ur of the Chaldees I found the same idea carried out.

I think that what impressed me most as an architect working with Mr. Woolley was his keenness and enthusiasm throughout. I feel I cannot speak without referring to this. His keenness as an excavator will carry those with him through anything, and his enthusiasm will overcome any of the discomforts and inconveniences which may arise in Mesopotamia.

It is this recollection which gives me so much pleasure to be here to-night; to view the excellent work which Mr. Woolley has accomplished during the last ten years, and to see it so well appreciated. Having been with him for three seasons I can say I have never been associated with anyone who has worked so hard to make a success of the undertaking which he has in hand.

Mr. E. STANLEY HALL [*F.*]: We have had the pleasure of listening to one of the best lectures we have ever had in this hall. With our architectural minds orientated modernwards at the present moment some of us might have felt we were very much dipping into the past, and that the lessons of the past were very much dead and buried and would not help us at the present day. When one reconstruction drawing appeared on the screen I heard someone mention: "Hallo, is that the latest thing by Howard Robertson?" —a flippant remark, perhaps, but it is true, as Mr. Whitburn said, that what we think is modern has been going on through the ages until we get, as one may say, almost "foxed" by the extraordinary feeling that civilisation seems to be a dreadful circle which completes itself and then begins again. I remember, in this Hall, at the time of the last Paris Exhibition, people were told they were only to have modern exhibits, and the English representative, who was lecturing here, said "I said to my immediate Chief, 'What do you mean by "modern"?'" His Chief replied "Well, if it is more than a thousand years old you need not refer to me; if it is less than a thousand years old you had better not have it." And that is what we have learned, the extraordinary age of the most modern things of to-day.

Mr. HENRY M. FLETCHER [*F.*] spoke of the enthusiasm with which he had listened to Mr. Woolley's lecture, and commented on the continuity of traditional methods shown in the modern reed huts, which are identical in construction with those of 6,000 years ago.

He mentioned that in the prehistoric pottery of Malta, as in that of Ur, the shapes were finer and the technique more accomplished in the Palæolithic Age than in the Neolithic, and the prehistoric Maltese ideal of feminine beauty, in which the width is greater than the height, persists to the present day.

He agreed about the importance of Mr. Woolley's discoveries concerning the antiquity of arch, vault and column.

The PRESIDENT: We have a very old member of the Institute here, Sir John Sulman, who left this country to go and practise in Australia about forty years ago; and I think we should like to hear him say something, as he is back in England, and frequently comes to see us here.

Sir JOHN SULMAN [*F.*]: Australia has practically no history, but geologists tell us it is one of the oldest portions of the earth's surface. We have there a primitive race, so primitive that it probably antedates almost any other living race in the world. It is

dying out, but its beliefs and its civilisation, such as it was—they had not arrived at the pottery stage, they were hunters and fishers, nomads of the soil—have been recorded by the eminent scientist, the late Professor Sir Baldwin Spencer of Melbourne University. If you are interested in the origins and early developments of the human race, I can commend his work to you with every confidence. Do not confound our dark native race with blacks or negroes, they are not even negroid ; they came from Asia. Australia is a continent shut off from the rest of the Asiatic world by tempestuous seas, and it would, no doubt, have been settled in the north by other and later races had it not been for the poor soil there. The East Indies are volcanic, and Java has a population of 40 millions, while we have only 6½ millions. There would have been a surge of other races into Australia if there had been a better soil. That was the reason it was unknown until the Dutch or the Spaniards discovered it. Our present civilisation and history extends to less than 150 years, and I venture, as a naturalised Australian, to say that I think we have done fairly well in carrying on the civilisation of Europe into this new yet old Continent.

I think I must have a tilt at my friend Raymond Unwin. He intimated to-night that the teachers of architecture did not know that the dome preceded the use of the lintel by the Greeks. For 25 years I was lecturer in our University in Sydney on Architecture and Building Construction, and, thanks to the excellent volumes of Perrot and Chipiez, I was fully aware of the development of the arch and the dome long before the Greek era, and I did not fail to tell my students that is where they had to look for the origin of them, and that their development and use in the modern world was owing to the Romans. I mention this because I would not like you to think I had not been telling them the truth.

The PRESIDENT : I am sure we are all agreed, ladies and gentlemen, that we have had a most instructive evening, and that we owe Mr. Woolley a very great debt of gratitude. I confess that while Mr. Woolley was reading his paper I was getting into rather a woolly state of mind, and when he began to tell us about the columns, and so on, it made me think a great deal about these early origins. Mr. Woolley will probably agree that the principal thing he has put before us to-night is that Assyria—which is practically Iraq—is as ancient as, or more so than Egypt, whereas until recently we have considered that Egypt had the oldest of all civilisations.

Mr. Woolley has made some interesting and instructive remarks about the use of corbelled arches, and the early date he assigns to them shows that what we have been accustomed to regard as the beginnings of these arches, as you see them at Mycenæ, can be traced to a much earlier period. He will probably agree with me that the ancient Egyptians knew all about the arch and used it frequently, as we can see in their buildings to this day. The Egyptians, however, considered that it was an unworthy architectural feature and that it should be only used in inferior buildings ; so you practically never find it in their Temples.

I think the most interesting part of Mr. Woolley's paper was that in which he touched on the dome. We know it is an Eastern feature, and came through Constantinople (Byzantium), and later influenced the architecture of Europe. I must say that when he showed us domes on pendentives, which, I think, he said dated back to 2500 B.C. or even earlier, I thought that was a most arresting statement to anyone who has studied architecture, and I shall look forward with much pleasure to the published lecture, which will appear in the Institute JOURNAL. We know that the Romans themselves did not use the pendentive, but placed the dome over a circular plan ; Mr. Woolley, however, has shown us that 2,500 years before Christ a dome was used over a square apartment, thereby necessitating the use of the pendentive, which was not used in Europe until the time of the Byzantines.

The use of columns in Mesopotamia is a big subject, but it may interest Mr. Woolley to recall that the late James Fergusson, who was the author of a great history of architecture, was of opinion that the Assyrians used columns to a large extent, but what he could not explain was how they made those columns when stone was so scarce, whereas Mr. Woolley has shown us most of the columns built of brick courses. The curved walls on the pyramid he showed are remarkable, and it strikes one as extraordinary that people building a massive wall should have used a curve on plan for apparently no reason.

Ladies and gentlemen, I should like to thank Mr. Woolley on your behalf for one of the most interesting addresses I have ever listened to, and I now put for your acceptance the vote of thanks.

The vote was carried by acclamation.

The Architectural Room at The Royal Academy Exhibition, 1930

This year there is a reversion to the more severe methods of displaying architecture at the Royal Academy. There are none of the large dashing perspectives we were accustomed to enjoy in previous exhibitions. On the contrary, there are a number of elevations and some quite large plans. This is an improvement, I suppose, in theory: but actually I was unable to think that the general level of the designs shown and of the drawing of the elevations was high. No. 1322 dominates the room. This superb pencil drawing of Sir Giles Scott's central tower at Liverpool depends entirely on a thin clear line to show the design. There are no washes or shadows or tricks of effect. One hopes that these working drawings of that great building will be preserved for the nation. Sir Banister Fletcher gives us a photograph as well as the elevation and plan of a bank in No. 1274. Mr. Walter Tapper, with three large "Designs for a Town Church" (1300, 1314 and 1327), gives us the whole thing —plans, sections and elevations. If there could be four or five large photographs of the completed building as well we should have a real exhibition of an interesting ecclesiastical work. But we have not yet achieved the right relation between photography and drawing. We all know that very fine photographs of buildings can be made—often of great artistic value. The public would enjoy those, and architects would enjoy seeing in the same frame sufficient drawing—but no more—to show how the effect was created. Apparently this has been discouraged as well as perspectives. The result is that most of the exhibits are elevations executed in the mode of perspectives. No. 1369 is Mr. Berry Webber's accepted design for a new store in Kensington; it appeared to be a distant cousin of the Albert Hall. That, I think, is commendable. There is no nonsense about the delineation of No. 1367—a design by Sir Reginald Blomfield. The plan and two sections of India House, Aldwych, by Sir Herbert Baker (No. 1347) are pleasantly presented. The same architect exhibits in the same way his Christian Science Church in Westminster (No. 1356). Perhaps No. 1370—Mr. M. Maufe's Junior Combination room at Trinity College, Cambridge, with its photograph and good detail drawing, is the nearest to the ideal exhibit. Mr. T. O. Foster's house at Rangoon with its pretty green sky (No. 1376) would have been so much more interesting with a plan attached. One hoped for something exciting from Sir Edwin Lutyens, and he appears in No. 1281. This shows—to some extent—the new Gamage building in Oxford Street. Some other drawings might be mentioned—if that is not invidious —as No. 1311, Mr. James M. Wilson's Post Office entrance in Iraq: Mr. Austin's house at Swanage (No. 1345): Mr. Oliver Hill's delightful rough sketch for houses in North Street, Westminster (No. 1371): Mr. Hepworth's two houses (No. 1454): and it is interesting to see the old school of the picturesque outline so well represented by Mr. Guy Dawber's House in Hertfordshire (No. 1414). F.R.I.B.A.

EXHIBITION OF STUDENTS' WORK AT THE CENTRAL SCHOOL OF ARTS AND CRAFTS.

By Professor A. E. Richardson [*F.*]

The Exhibition now open at the Central School is not only representative of the teaching of craftsmanship but all the sections maintain a high standard. The specimens of work range from pottery and furniture to textiles and costumes. Other sections deal with woodcuts, engravings, etchings and water-colour, bookbinding and silver work. The bulk of the work is produced by young students, and for this reason praise is due to the organisation of the technical training. All interested in the maintenance of craftsmanship and honest adventure in art should visit the exhibition and encourage the young artists by purchasing some of the exhibits.

Not the least among the activities of the School is the study of architecture and construction. The Central School attracts the majority of its students from among those who work in offices during the day. These young people have perforce to study in the evenings, and they are indeed fortunate in being able to obtain the advice of practising architects whose skill is well known.

The architectural work this year is chiefly remarkable for thoroughness. In other words, the drawings illustrate a special programme which formed the chief of the year's work. Incidently, the nature of the programme recalls the interesting experiment made by Professor Hubert Worthington, of the Royal College of Art, some years ago, when the subject of a complete village worked out in sections by individual students was tackled. It is evident that the present idea is to devise a unified assemblage of buildings and at the same time to allow freedom. In the present instance Mr. Caulfield decided that the village of Castle Combe in Wiltshire should provide the model. The selection was made not from the types of old buildings, but to provide data for situation and land contours. This interesting point of view gave the students the necessary resistance without which architectural designs are apt to be in the air.

A plan was prepared by the staff showing the existing sites, and the students were instructed to select certain buildings to develop. A number of the students visited Castle Combe in order to study the local conditions and to gain personal knowledge of the locale. As events worked out three students prepared designs for the village church, and produced very creditable studies.

Miss Majorie Duffell designed the Roman Catholic Chapel and the Priests' House. This student's drawings can be said to be up to professional standard. Mr. D. G. Martin and Mr. A. Wilkinson each designed a war

memorial, their work being reminiscent of the covered market crosses of the west country. Among the other designs to be commended are the following :—

An institute, by Mr. C. K. Slade ; school, by Mr. A. Wilkinson ; manor house, by Mr. J. Harman and Mr. D. W. Harrington ; dower house, by Mr. J. W. G. Smith ; rectory, by Mr. H. W. Hawkes, and Mr. G. C. Fardell ; Castle Inn, by Mr. J. W. G. Smith, Mr. J. F. Learner, and Mr. D. E. Nye ; and The White Hart Inn, by Mr. C. Tarling.

Another interesting design is that for the Tea Room, Garage and Petrol Station by Mr. Wilkinson. There are numerous other drawings for lesser buildings, such as cottages, the smithy and village shops.

Mr. Caulfield and his colleagues, Mr. E. FrazerTomlins, Mr. F. H. Mansford and Mr. Ewart, have adopted the right methods, and by encouraging respect for constructional architecture they are keeping their students within the range of sanity. The present exhibition proves that a knowledge of building technique can be acquired without forcing the students to imitate German factories. The drawings are beautifully presented and nearly all the buildings would look well if carried into being. The exhibition in itself is a tribute to the ideals of the Central School, and the principles pursued might be followed with advantage in larger schools where teaching is unlimited, in time, scope and blind imitation of novelty. The liberal educational policy of the Royal Institute does not discourage the open door in teaching circles where students are not fully endowed with means to study. Mr. Caulfield aims at a high standard, and the work of his school is gaining recognition.

Reviews

NOTES ON SOME RECENT FOREIGN PERIODICALS.

By Grahame B. Tubbs [*A.*].

The design for the Temple Emanu-El on Fifth Avenue, which has the place of honour in the February *Architectural Forum*, raised an interesting point of style. This building is a large synagogue and its appurtenances, and the architects, Messrs. Kohn, Butler and Stein, with Goodhue Associates as consultants, were faced with the fact that there is no national Jewish manner of building, as in the past their synagogues have been made in the style of the period and country in which they were built. The designers, therefore, felt free to choose the style they thought most appropriate, and eventually decided upon the very early Romanesque of Syria and the East. The Temple, which is of basilican type, seats 2,500 ; adjoining is a chapel and beneath them or adjoining are a banquetting hall for 1,000, an assembly hall, Sunday-school rooms and rooms for the Rabbis, a library for 25,000 volumes and offices for the Hebrew Union College. The exterior is carefully studied and has some good detail. Inside the ornament is concentrated on the sanctuary ; the main walls are plain, the decorative scheme having been determined by the acoustic tile with which the walls are faced. These are of brown shaded from light at the bottom to dark at the top. Narrow gold tiles are used between to emphasise the vertical effect. From the photographs the interior does not seem to be as successful as the outside. Other buildings represented in the magazine include the Governor Clinton Hotel, which is on 31 floors, and a Woman's Residential Club at 18, Gramercy Park. The graph of new building construction shows that there has been a marked falling off in new work in November and December, and it is thought that more time will be required than was at first expected before the building industry recovers from the financial crash of the autumn. This number has an article on the grisaille glass windows of the American firm of Paris and Wiley.

"Tempera Painting of To-day" is the title of an article in *The Architect* (New York) (February) by Frank Schwarz, illustrated by examples of church painting that he has done in this medium after studying old technical treatises and the actual work of the old masters in Italy. The largest building in the magazine is the Baltimore Trust Building, which is a skyscraper of rather mediæval flavour externally whose vertical piers are terminated by boldly sculptured birds. The Banking Hall is a huge room with an elaborate mosaic floor.

In *Pencil Points* the seventh article on the Geometry of Drafting shows, by means of enlarged drawings, how errors accumulate owing to inaccurate drawing. It gives reproductions of Eric Gugler and Roger Bailey's winning design for the Chicago War Memorial. This is to be placed on the lake side and is a fine imaginative scheme. It has a long, rough-hewn, sarcophagus-like stone surrounded by huge square piers forming colonnades.

In *California Arts and Architecture* for February the architectural feature is the Richfield Building, which was built to conform to the Los Angelos regulations which restrict the height of buildings to 150 feet. This is built of black terra-cotta and has a central tower to take the water-tanks and lift-mechanism, surmounted by a horrid Eiffel Tower-like structure on which are advertising lights. This spoils what would be rather a fine building.

In the March number of the *American Architect* reproductions are given of the awards to competitors in the Architectural League Exhibition, for various classes of architecture ; landscape gardening, sculpture, decorative painting and architectural rendering. Beside these there is a description of the new Beaux-Arts Building, New York, which is remarkable both on its own account and because it was not only designed and promoted by architects, but financed on a novel plan. It arose from the necessity of finding better accommodation for the Beaux-Arts Institute of Design. Several prominent architects were asked to look for a suitable site upon which to rebuild, and after much searching they recommended that a large site at Forty-fifth Street, in what had been a slum area, be bought and that a group of studio-flats be erected around the Institute to form a new artistic colony. Their idea was adopted and carried through at the cost of five million dollars by Raymond Hood and Kenneth Murrison. The residential parts consist of two blocks of one-roomed flats, some of which were arranged, by ingenious planning, to extend in height through a story-and-a-half ; they measure 36 feet by 15 feet by 13 feet 6 inches high. The smaller rooms were 22 feet by 13 feet and all have a bathroom and a pantry

fitted with refrigerator, kitchen-cabinet and sink. Ventilated bed-cupboards are provided into which the beds can be folded in the daytime. A proposal to incorporate definite regulations in the Pennsylvania building code as to the relationship between the rise and tread of stairs has caused this paper, with others, to publish definite information about actual examples. From those they give the following generalisations for comfortable "going": risers 6–6¾ inches, "run" 11–13 inches, nosing not above 1½ inches, product of rise and "run" 69–87·6, angle 23°–31½°.

The Journal of the Royal Architectural Institute of Canada for February tells us about the interesting new Medical Arts Building at Toronto by Marani and Lawson, which is intended for the use of doctors. There are 204 suites, and common X-ray and dark-rooms and so on are provided. On the ground floor are a Bank and some shops. The plan is L shaped and the detailing is strongly Georgian in flavour. The Autumn number of *l'Architecture Vivante* is given up entirely to one house, designed by Eilleen Gray and Jean Badovice (the editor) and built on the slopes overlooking the sea at Cap Martin. It seems to fit into the landscape remarkably well in spite of its ultra-mechanical form. The photographs of the interior, the specially made metal furniture and the elaborate fittings, show it to be a house of exceptional interest. The working drawings, given in the text, are however very difficult to follow.

In the Gazette des Beaux Arts for March Salomon Reinach reports upon the discoveries of the year relating to ancient art. The most important pieces are a colossal Zeus found in the water at the Artemision; an Athlete by Myron, a statue of a crouching woman and the very beautiful *Dea di Butrinto* which was given by the King of Albania to Signor Mussolini. Alexandre Anissimov contributes a fully illustrated paper on Russian painting in the fourteenth century, with special reference to one Theophanes the Greek, who exercised profound influence on Russian art, which had by that time completely assimilated the Byzantine tradition into its national style.

L'Architecture for 15 February gives three war memorials by Paul Cret put up in France to commemorate the fallen of the 28th, 79th and 80th Divisions of the U.S. Army. These divisions were either partly or wholly recruited in Pennsylvania, and the monuments have been erected by that State. The most important and impressive is at Varennes-en-Argonne, and stands on a tree-covered hill overlooking the plain where the fighting took place. It consists of two colonnades enclosing a square, at one end of which is a long, low altar supporting a stone tripod. The second is at Fismes and takes the form of a bridge with two circular fluted pylons supporting figures. The third is at Nantillois and is a flat wall with sculpture reliefs and inscription.

In the March 2nd number of *La Construction Moderne* there is a large villa and garden at St. Cloud by M. L. Süe, A.D.P.L.G. The house is curiously planned with a few magnificent rooms *en suite*; but the access to smaller rooms and the lighting of service arrangements seem to have received less attention than might have been expected from a house of this character. This number gives particulars of a good ferro-concrete garage in Rue Rennequin, Paris. This takes 300 cars and the upper floors are reached by a straight ramp of 13° pitch and 3 metres wide. The number for 23 February is given to Herr Höger's work and the reproductions include flats for the Hamburg aerodrome; offices for the *Hanover Monitor*, which has strongly marked vertical piers and is roofed by a huge dome; and a fine school at Hamburg Eppendorf.

Coming to the German magazines, *Wasmuths Monatshefte* for March has a very good article on the new Market Halls at Leipsig and Reims. The former is roofed by two immense ferro-concrete domes 70·4 metres in diameter. The original model, which is shown, is for a larger scheme having three domes, which one hopes may be carried out eventually. The pictures taken of the interior of the hall while the scaffolding was still in place are very impressive and give an idea of the huge size of the building. The market hall at Reims is smaller and is also made of ferro-concrete. In this case the hall is spanned by parabolic arches 38·26 metres wide. The light is obtained by inserting glazing between the arches at intervals instead of filling them in solid, and these windows extend the whole width of the span. This number, among many buildings of interest, gives drawings and photographs of a new Sound Film studio at Berlin designed by Otto Kohtz for the Universum Company of Berlin. There are four studios radiating from a central court and surrounded by one storey of dressing-rooms and with sound-locks at each entrance to prevent outside noises from entering the studios. Externally the effect of the perfectly plain unrelieved brick walls is impressive. In the same number is a translation of an article on Glass by Frank Lloyd Wright.

The whole of the March number of *Innen Dekoration* is given to illustrations of interior decoration, houses decorated and furnished from the designs of Fritz Gross of Vienna. His work is characterised by the use of plain surfaces of plaster or of plywood with very few mouldings, but he makes decorative use of built-in bookcases, writing desks and bedroom furniture. *Die Baugilde* for January, gives a good collection of engineering structures including the new long span suspension bridge at Cologne-Mulhein, and ferro-concrete bridges of various types and a good electricity mast. The *Bygge Kunst* for February gives the designs submitted in a competition for a Boat Club House and in the Spanish *Arquitectura* the competition designs for an Airport outside Madrid are illustrated.

NOTES BY MEMBERS OF THE SCIENCE STANDING COMMITTEE.

A Study in Heating and Ventilation in Schools.

By H. M. Vernon and T. Bedford (assisted by C. G. Warner). Industrial Health Research Board. Report No. 58. (62 pp. H.M. Stationery Office. 2s. 6d. net.)

This work constitutes an extension of a previous one on *A Physiological Study of Ventilation and Heating in Certain Factories*, by the same authors. (Report No. 35.) Whereas the earlier work deals with the more general forms of heating, however, the present pamphlet gives the results of investigations of two particular methods of heating—"Under-floor Heating" and "Panel Heating." For the sake of convenience, the investigations of the two

systems named were carried out in their application to the heating of schools, though, as the authors remark, "much of the evidence obtained can readily be applied to industry."

With reference to under-floor heating, the example instanced is the method employed by Mr. G. H. Widdows, architect to the Derbyshire County Council. A hollow floor is formed by supporting ⅞-inch concrete slabs some seven inches above the surface concrete, the space between providing accommodation for a system of 2-inch diameter low-pressure hot water pipes.

The form of panel heating described consists of radiation from cast iron panels fixed in the ceiling and heated by means of hot water pipes.

It is found that, while the more common systems of heating and ventilation result in a temperature distribution having a higher temperature at the head-level than at the floor (sometimes by as much as 8 deg. Fahr.), the low temperature radiation from the panels results in a more even distribution, and the under-floor heating has the effect of a distribution with highest temperature at the floor.

The results of tests go to prove that both physical comfort and personal efficiency are increased by the distribution of temperature attendant upon the two methods described.

Incidentally, the course of their experiments has led the authors to offer some important criticisms on some of the commonly accepted ideas regarding open-air schools with little or no artificial heating. It has been found that the efficiency of the children in such schools is reduced, in some cases by as much as 50 per cent., and it is suggested that the open-air system should be adopted in a less drastic form. It is found that, in order to secure full efficiency, the temperature should nor fall much below 60 deg. Fahr., and never below 55 deg. It is pointed out that the requisite temperature could be maintained without reduction of air current by the use of the under-floor or the panel system of heating. ALFD. H. BARNES [*L.*].

Correspondence

EASEMENTS OF LIGHT.

9 *Gray's Inn Square,*
*London, W.C.*1.
14 *June* 1930.

To the Editor, JOURNAL R.I.B.A.,—

DEAR SIR,—As the case quoted in the report in your issue of 26 April and mentioned in my letter was given as Stinges *v.* Bridgman; and as the book which Mr. Swarbrick states that I ought to have consulted before commenting on your report is not even mentioned in it, perhaps I may be forgiven for not having guessed that the reference really was the case of Sturges *v.* Bridgman.

At the time of writing, the law libraries are closed for the Whitsun recess; but I believe that both Sturges *v.* Bridgman and Rushmer *v.* Polsue and Alfieri were not light cases at all, but actions for nuisance due to noise and vibration. In noise cases it is of course essential to take into account the locality and the other noises prevalent in it. That which might be intolerable in a quiet residential suburb might well pass almost unnoticed in a busy manufacturing town.

There is little need to wait higher authority for the *ad hoc* decision in Horton *v.* Beattie to the effect that locality cannot affect the measure of legal nuisance due merely to insufficiency of light for ordinary purposes.

That judgment has already been so frequently considered, approved and applied in the Courts (with presumably full knowledge of the earlier cases of Sturges *v.* Bridgman, Rushmer *v.* Polsue and Alfieri, Kine *v.* Jolly and many others) that the prospect of it ever being reversed in the Court of Appeal or the House of Lords appears to be too remote for serious consideration.

I am no lawyer, but I believe that any *ad hoc* decision takes precedence of mere *obiter dicta* in earlier cases.

It is therefore dangerous for architects to neglect this clear decision, reported for their guidance, merely because there are two higher Courts which might conceivably reverse it.

The suggestion that the Courts will not protect the rights of these who, being poor, are compelled to work or to live in overbuilt localities, where adequate light is scarce, because "work people are no doubt accustomed to sumit to a greater amount of nuisance" is certainly novel.

It would be interesting to hear the comments of lawyers upon it; but it is to be hoped that no architect will, with this object, adduce it in the Courts.—Yours faithfully,

PERCY J. WALDRAM [*L.*].

LONDON BUILDING ACTS COMMITTEE.

The following Building Acts Regulations of the London County Council have been brought to the notice of the London Building Acts Committee of the Royal Institute and are now published for the information of members.

REGULATION 119.

Shelters over public way.—Applications for consent under the London Building Act, 1894, to the erection of shelters over the public way shall be considered only in the case of a theatre, music hall, cinematograph hall, or public hall with seating accommodation for at least 500 persons, or a restaurant or hotel with seating or sleeping accommodation for at least 200 persons, or a railway station, and provided that the width of the street in which the shelter is to be erected and the construction and position of the shelter are such as may be prescribed, and that the design of the shelter is to the satisfaction of the Council; and any consent which may be granted shall be subject to such other conditions as may be imposed.

REGULATIONS 120 AND 121.

New streets for foot traffic only. Formation of streets—movable posts.—Whenever plans of new streets to be laid out for foot traffic only are sanctioned, a condition shall be attached binding the applicant to pave the street over the entire surface, and by posts, bars, or otherwise, to prevent such street from being used for carriage traffic.

In all cases in which posts, etc., are required to be placed at the ends of streets, such posts, etc., shall be made movable so as to admit of the passage of fire escapes.

REGULATION 126.

Appointment of district surveyors—conditions governing candidature.—(*a*) No person shall be accepted as a candidate for the appointment of district surveyor unless he shall have

attained 28 years of age and be under 50 years of age, and every such candidate shall deliver with his application satisfactory evidence of his age.

Conditions of appointment.—(*b*) Every candidate shall be required to sign a declaration and deliver it with his application, that he becomes a candidate, and will accept the appointment, if he should be appointed, on the following understanding :—

(i) That he will personally discharge the duties of his office subject to section 142 of the London Building Act, 1894.

(ii) That he will give his whole time to the duties of his office.

(iii) That he will not during his continuance in office (except in the discharge of the duties thereof) carry on business as an architect, surveyor or builder, or directly or indirectly, as a partner or otherwise, be interested in such business.

(iv) That he will make no claim for compensation in case a diminution of his income shall at any time hereafter arise, and that the Council shall not be liable to compensate him for any diminution of income which may be caused by any statutory alteration of the fees payable to district surveyors in respect of alterations and additions to buildings.

(v) That he will keep his district office open from Monday to Friday (both inclusive) between the hours of 9.30 a.m. and 5 p.m., and on Saturday from 9.30 a.m. until 1 p.m., and give his personal attendance there daily from 9.30 a.m. to 10.30 a.m.

(vi) That he will retire on attaining the age of 65 years.

Declaration.—(*c*) The decaration of the appointed candidate shall, on his appointment, be entered on the minutes of the Building Acts Committee.

Medical examination.—(*d*) Every appointment of district surveyor shall be subject to the person appointed passing satisfactorily a medical examination by the Council's medical examiner.

REGULATION 127.

District Surveyors—rearrangement of districts.—The districts allotted to district surveyors shall be rearranged as opportunity may occur, so that the average of the fees received may in no case amount to less than £500 a year.

STANDARDS OF ADEQUACY OF DAYLIGHT ILLUMINATION AND REASONABLE FENESTRATION.

Members are referred to the memorandum and diagram which were published in the JOURNAL of 12 April 1930 (page 382), as to which criticisms were invited. As it is desirable that a report should be made to the Daylight Committee of the International Commission on Illumination at an early date, it is proposed, unless any comments are forthcoming within a week of the publication of this JOURNAL, to report to the Daylight Committee that no adverse criticisms of the diagram as a reasonable criterion of modern fenestration in town buildings have been received.

PROFESSOR RAGNAR OSTBERG.

Professor Ragnar Ostberg [*H.C.M.*] has been elected an Honorary Foreign Academician.

COLONEL JOHN BROWN.

Colonel John Brown [*F.*] has been elected Chairman of the British Legion.

ST. PAUL'S CATHEDRAL.

In connection with the reopening of St. Paul's Cathedral on 25 June, after 17 years of restoration work, the Council of the R.I.B.A. have, with the kind assistance of the Cathedral authorities, arranged in their galleries at 9 Conduit Street an exhibition of models, masonry specimens, drawings and photographs, to illustrate the work of restoration. This exhibition will be open (free) to the general public between the hours of 10 a.m. and 8 p.m. (Saturday, 5 p.m.), from Monday, 23 June, to Saturday, 28 June (inclusive).

The exhibition will also be open at a general meeting on Monday, 23 June, at 8.30 p.m., when an illustrated lecture on the subject will be delivered by Captain C. Stanley Peach, F.R.I.B.A., and Mr. W. Godfrey Allen, F.R.I.B.A.

ROME SCHOLARSHIP IN ARCHITECTURE.

The Faculty of Architecture of the British School at Rome have awarded the Rome Scholarship in Architecture for 1930 to Mr. William Graham Holford, of South Africa, at present a fifth-year student of the Liverpool School of Architecture, University of Liverpool.

The Rome Scholarship in Architecture is now provided for by an annual grant made to the British School at Rome by the Council of the Royal Institute of British Architects. It is of the value of £250 per annum, and is ordinarily tenable for two years at the British School at Rome.

An exhibition of the competition designs will be held in the Galleries of the Royal Institute of British Architects, 9 Conduit Street, W.1, from 30 June to 5 July inclusive, between the hours of 10 a.m. and 7 p.m. (Saturday, 10 a.m. to 2 p.m.).

Mr. A. J. Davis, F.R.I.B.A., a member of the Faculty of Architecture, will deliver a criticism on the Rome designs to members of architectural Schools on Monday, 30 June, at 2.30 p.m.

EXHIBITION OF "PUNCH" DRAWINGS.

The proprietors of *Punch* propose holding an exhibition of original drawings by John Leeds, Charles Keene, Sir John Tenniel and George du Maurier at the *Punch* Office, Bouverie Street, E.C.4, on Monday, 16 June, from 11 to 5, to 25 July (excepting Thursday, 3 July), but not Saturdays. The proprietors will be happy to send invitation cards for distribution to those who may desire them. As the time is so short, any members of the Institute who come on Monday will be gladly admitted on presentation of their personal cards.

MEMORIAL TO THE LATE SIR EBENEZER HOWARD.

The memorial to Sir Ebenezer Howard will be unveiled in the Howardsgate Gardens, Welwyn Garden City, on Sunday, 22 June 1930, at 3 p.m., by the Rt. Hon. the Earl of Lytton, P.C., G.C.S.I., G.C.I.E., when the Most Hon. the Marquess of Salisbury, K.G., P.C., G.C.V.O., C.B., T.D., will preside. It will be recalled that the R.I.B.A. made a donation towards the funds of this memorial in March of last year.

Schools of Architecture

SIXTH SERIES

I.—The School of Architecture at the Government School of Art, Bombay

BY PROFESSOR CLAUDE BATLEY [*A.*].

This school constitutes the only serious effort made in India to train the architects who are to practise over an area about fifteen times as extensive, and with a population at least seven times as large, as that of the British Isles, and having an architectural tradition not only far older than that of Europe, but pre-eminently fitted to her particular needs. It may therefore not be without interest to deal with our particular problems, and the history of our efforts to meet them, somewhat more fully than would be justified were they identical with those which the other recognised Schools of Architecture have to face.

Evidence of the highest architectural aptitude exists in the Buddhist work from Asoka's reign in the third century B.C. The tradition handed down from that time persisted through the great periods of India's later Hindu kingdoms and endowed the architecture of the subsequent Mohammedan conquerors from the thirteenth century onwards with a character that made it entirely distinct from that of the architecture of their homelands in Afghanistan and Persia.

It was not until the break up of the Moghul empire under Aurangzeeb's fanatic despotism that, in consequence of his prejudice against the Hindu craftsmen, the great building tradition of India began to fall to pieces, although it has by no means entirely disappeared even to-day, except in the larger cities. The mediævalism of the individual craftsman has been swamped by the Indian Government's particular brand of organisation and efficiency which has imposed upon India not only its "orders" and "styles" but, worse, its standard specifications imposing "stop chamfers," "rustications," "Marseilles tiles," "leaded lights," and a thousand and one other foibles as incongruous in India as the "sock suspenders" that the young Indian of fashion displays so ostentatiously below his traditional nether garments.

To-day, the practitioners of architecture in India may be roughly divided into three classes :—

(*a*) The European-trained architects, both Indian and European, mostly members of the R.I.B.A., practising in the larger cities privately, or as official architects. This class numbers, perhaps, a hundred individuals.

(*b*) Practitioners, also mostly confined to the larger towns, who call themselves architects, and imagine they are working on lines similar to those prevailing in Europe. With the exception of some fifty who have passed successfully through the Bombay School and hold the Government Diploma in Architecture, the bulk of them have received no architectural training in the true sense of the term, and depend on the knowledge gained in the engineering colleges, whose primary function is to supply men for the Indian public works department in its multifarious branches such as irrigation, roads, sanitation, hydraulics, electricity, and civil engineering. Of this class those practising privately as architects may number some 250, while probably at least an equal number are engaged in the Government departments most intimately concerned with the erection and maintenance of buildings.

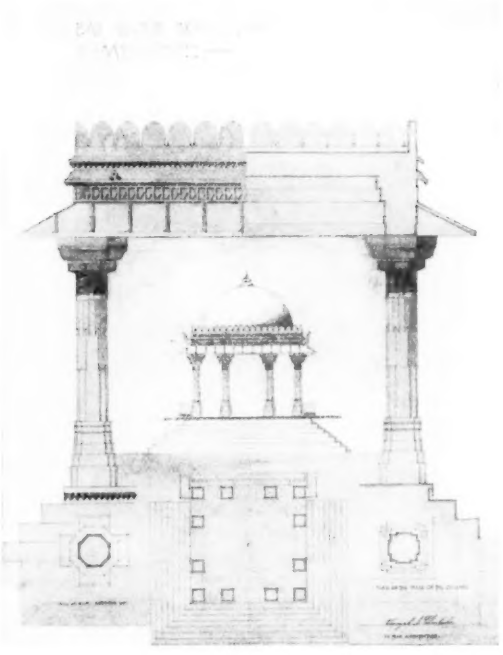
(*c*) The vast army of Indian master-builder-craftsmen, or mistris, who are responsible for the bulk of modern building work throughout India, except in the largest cities (where Europeanised qualifications in civil engineering are insisted upon by the municipal authorities). These men work on the old traditional lines, practically living on their works, and generally carrying them out in the closest co-operation with the building owner, who generally purchases his own materials and employs his labour direct.

The work produced naturally varies in merit, but it is, generally speaking, far more interesting than any of the other work carried out in India, not only because those employed thereon are in more intimate touch with their clients' requirements and with the traditionally trained craftsmen, but also because they are free from the contract system which is still foreign to their somewhat mediæval outlook, and which, as it prevails in India to-day, is generally productive of scamping, both in workmanship and material, as well as of much corruption in the way of secret commissions and illicit gratifications at the expense of the employer.

The serious weakness of practitioners of this class is the lack of any knowledge that would enable them to deal with the larger problems of modern planning, while their acquaintance with the world progress in the production and marketing of building materials, and of up-to-date hygiene and equipment relating to buildings is so slight as to be only dangerous.

Those men are therefore never likely to be entrusted with important public works such as the hospitals, libraries, municipal and Government buildings of the India of the immediate future ; they will, however, be employed for generations to come on the smaller domestic buildings, and the Hindu temples and Mohammedan mosques, which are being built to-day in almost, if not quite, the same spirit as of old.

The object, therefore, of the School is to provide such a training as will equip, at least some of those who in the ordinary course of their training would be entering the latter two groups, with that particular training which neither the engineering colleges nor the craftsman-apprenticeship system can supply, and so fit them to practise on an equality with those of our first group. Many will no doubt be unable to rise to such a standard as will fit them to practise on their own account, but these will find a useful sphere awaiting them as assistants to their more successful confrères.



MEASURED DRAWING. By V. N. Chemburkar
Bombay School of Art: First Year

With this somewhat lengthy introduction to our problem I may perhaps be permitted to sketch the history of the School in Bombay, first in its gradual realisation of the problem, and then in its progress towards a solution.

In 1853 a wealthy Parsee, Sir Jamsetji Jejeebhoy, Bart., offered to contribute a lac of rupees towards the endowment of a School of Art, on condition that the East India Company agreed to erect a suitable building for the purpose.

As an outcome of that offer the first drawing classes were started in 1857.

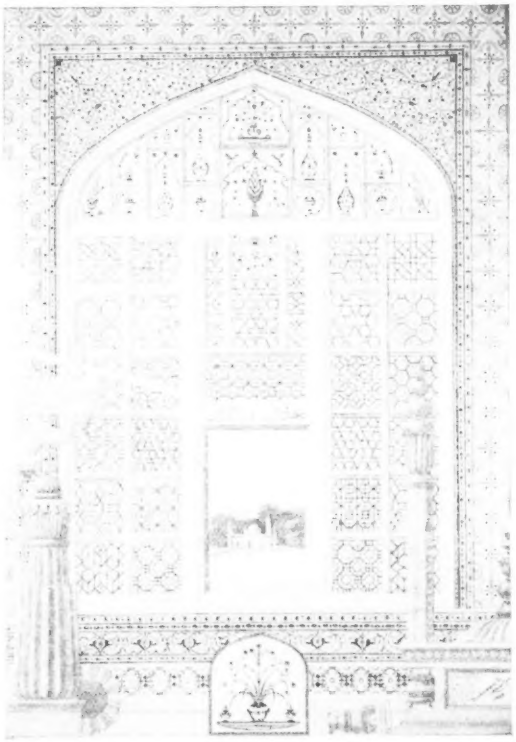
The directors of the East India Company had engaged the services of a Mr. Terry, a draughtsman and engraver from England, and, on his arrival towards the end of that year he at once organised additional classes in design and engraving, while the Baronet himself lent a vacant house in Abdul Rehman Street in which to accommodate the School.

In 1866 Messrs. Griffiths, Higgins and Lockwood Kipling (the father of Mr. Rudyard Kipling, who was born in Bombay) were brought out to conduct ateliers in decorative painting, ironwork, and modelling respectively. Under Mr. Lockwood Kipling's direction the students prepared models for the carving on the University buildings, the somewhat famous terminus of the Great Indian Peninsular Railway, and several other important public buildings in the Gothic Revival manner which were erected in Bombay about this time under the influence of such men as Scott, Stevens, and Burges.

About the year 1880 the Government of Bombay decided to take over entire control of the School and erected the main block of the existing buildings at the cost of some two lacs of rupees, and Mr. Griffiths was appointed as Principal, Mr. Lockwood Kipling having gone to Lahore.

Classes in architecture were then for the first time included in the curriculum: they were, however, only an attempt to provide the students of the School with such a general knowledge of the art as should aid them in their more advanced studies in drawing, painting, and modelling.

Mr. Griffiths retired in 1895, and was succeeded by Mr. Greenwood, who had come out to India in 1891 to organise the Government Drawing Examinations for pupils in the High Schools of the Bombay Presidency, and to carry on the regular inspection of the work done in these schools. Mr. Greenwood retired in 1896 on account of ill-health, and his place as Principal was taken



INDIAN COMPOSITION. By B. D. Mhatre
Bombay School of Art: Third Year

by Mr. Cecil Burns, to whom the present School of Architecture owes its inception.

Mr. Cecil Burns retired in 1918, and was succeeded by the present Principal, Mr. W. E. Gladstone Solomon.

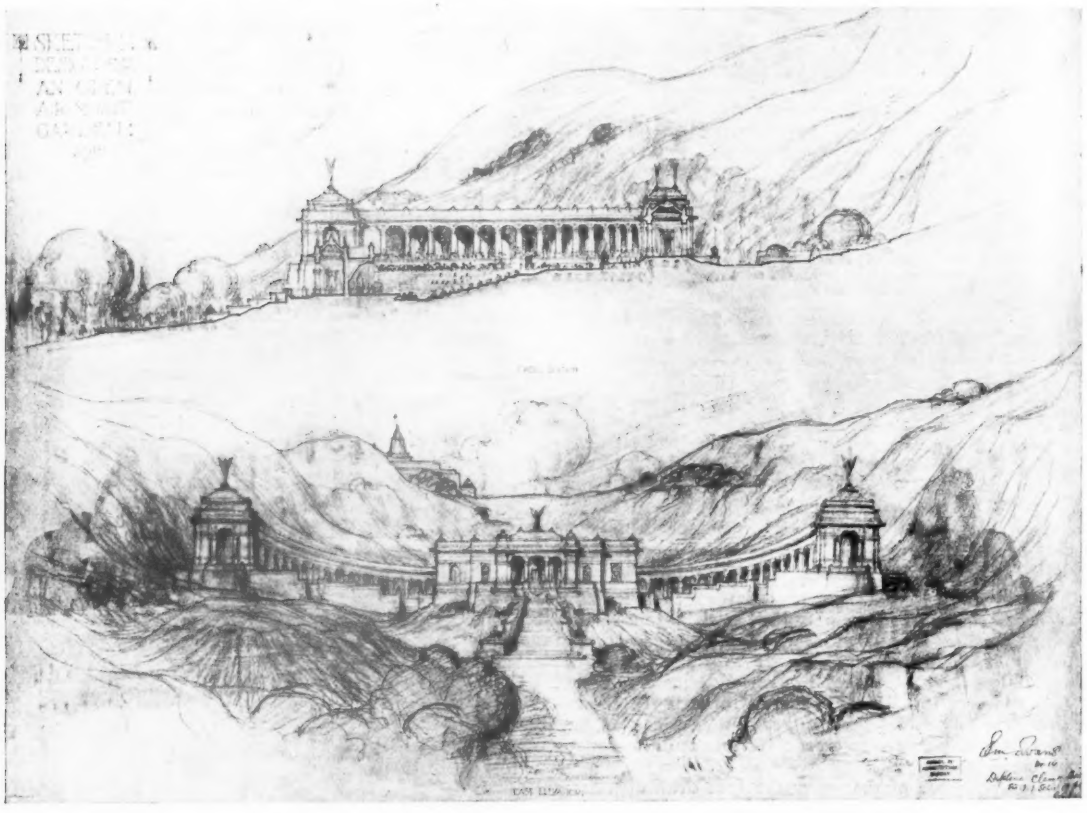
Dealing now with the architectural school only, we find that it was about 1900 that the classes in architecture, under the advice of the first Consulting Architect, for the first time professed to concern themselves with the training of the students as office draughtsmen.

In 1907, the Government recognised this training by granting to candidates who passed the preliminary and elementary examinations in architecture at the School what was called a "draughtman's certificate," the possessor of which became eligible for employment in the lower grade posts in the drawing offices of the public works department.

In 1908, the late Mr. George Wittet, F.R.I.B.A., took charge of these classes and instituted a four years' course in order, as he expressed it, " to afford instruction to those students intending to enter architects' and engineers' offices as assistants," the classes being held from seven to nine in the mornings. The fees were then only about half-a-crown a month, and Mr. Wittet was assisted by only one whole-time teacher.

In 1911 the architectural section of the school was further developed by the appointment of three visiting lecturers, and the fees were raised to their present level, which for the first four years' course average a little over two guineas for the session of two terms. The fee for the fifth year, instituted later on, is about seven guineas.

The Architectural School became so popular that Mr. Wittet found its organisation more than he could manage in addition to his official duties as consulting architect, and in 1913 Mr. Robert W. Cable was appointed from the staff of the Architectural Association School in London to take charge. He at once urged the Govern-



TIME STUDY: A MAHARAJAH'S MUSIC GARDEN IN THE HILLS. By E. V. Vidwans
Bombay School of Art: Fifth Year

ment to bring the course of training more into line with that afforded by the best schools of architecture in Europe, and as an initial step to revise the morning school course and extend it to five years. At the same time a comprehensive scheme was drawn up in connection with the School of Art for a series of public examinations in all branches of art to be conducted by Government in place of the examinations hitherto conducted by the school, and the new course in the School of Architecture was designed so that the first and second years prepared students for the Government elementary examination, the third year for the intermediate, the fourth year for the advanced, and the fifth year for the Government Diploma in Architecture.

The War intervened before these innovations could be carried through fully, but on Professor Cable's return from war service the fifth year was added, and the school became a recognised school for exemption from the R.I.B.A. intermediate examination. A further scheme was drawn up for the development of architectural education in India, aiming at bringing the school up to such a standard as could be accepted by the Board of Architectural Education in London for the exemption of students from the R.I.B.A. Final Examination, so as to save them the formidable adventure and onerous expense of a long visit to England across the " Black water " in order to obtain the coveted qualification for Associateship of the Institute, but, although Government have given approval in principle, no further development has at present been possible owing to the general policy of retrenchment rather than of extension which circumstances have forced Government to follow.

The municipal authorities, however, accepted the Government diploma in architecture as a qualification entitling holders with three years' practical experience in an architect's or engineer's office to be granted the licence necessary to practise as architects or civil engineers in Bombay, a privilege that students trained as architects then for the first time shared with Licentiates and Bachelors of Engineering from the Government engineering colleges.

The first qualifying examination for the diploma was held in 1923, and since then some forty students have gained the diploma; most of these men have taken advantage of the privilege of enrolling themselves as students R.I.B.A., and several have gone to England and successfully passed the R.I.B.A. Final Examination there, after a creditably short period in one or other of the London schools.

In 1923 Professor Cable took up the post of architect to the Bombay Improvement Trust, and Mr. Woods Hill, the then consulting architect, took over, but resigned after less than a year. Since that time I have been responsible for the school, at the same time taking my share with my partners in the demands of a somewhat extensive practice.

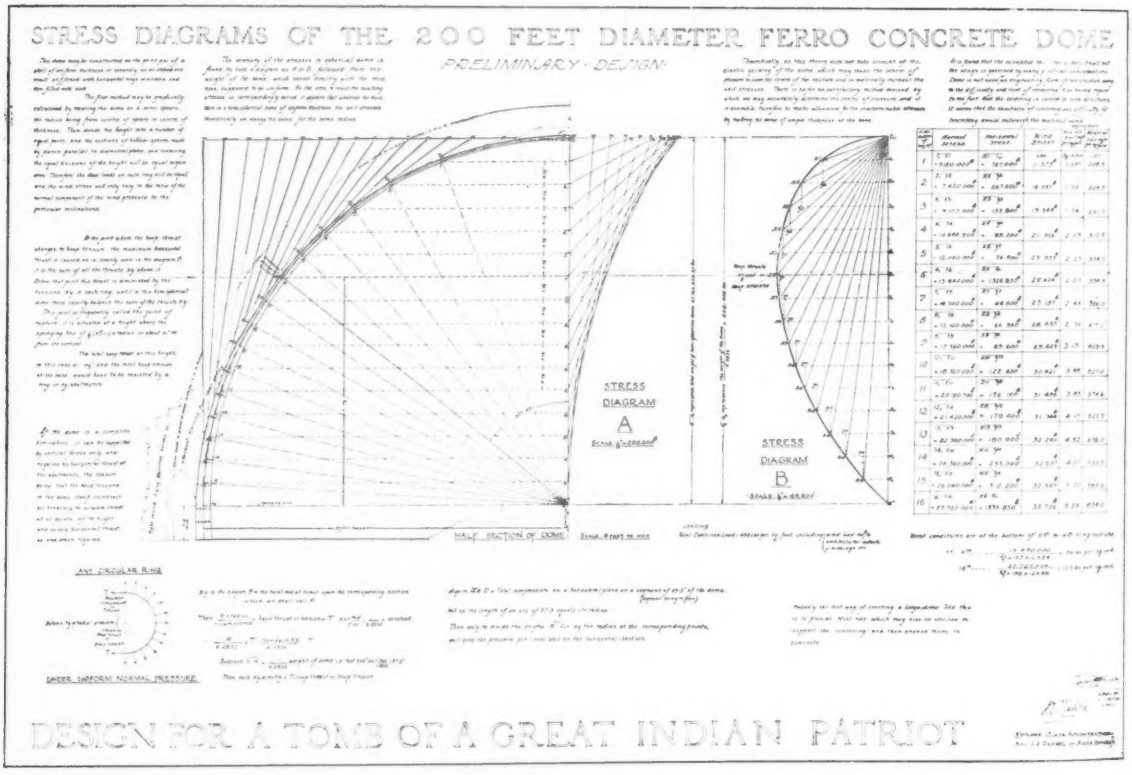
Our time table, which is given below, hardly indicates how different the curriculum is from that of most of the other recognised schools; actually, the Indian traditional work takes up a great deal of our attention, colouring all our teaching, while almost all our design work is based on it.

The teaching is given by myself and eleven visiting lecturers, assisted by twelve assistant teachers. The visiting lecturers are all practising in the subjects they teach, and the assistant teachers are all either diploma holders or specialists in their own subjects.

The vacation work includes model making, measured drawings, working drawings, and essay work.

The school now numbers about 130 students. Not the least of our difficulties is the fact that English, in which the teaching is given, is the native tongue of very few of the students, and a language that only a small minority use in their homes. The languages and dialects represented in our school must number well over a score.

	First Year.	Second Year.	Third Year.	Fourth Year.	Fifth Year.
Sunday and Public Holidays	Study Classes supervised by a Visiting Lecturer with two Assistants.				
Monday ..	Lettering and Ornament.	Sciography.	Theoretical Construction.	History (Renaissance and Moghul).	Working Details.
Tuesday ..	Materials.	Practical Construction.	Specifications.	Analytical Design.	Principles of Architecture.
Wednesday ..	Elements of Architecture.	Perspective.	Practical Construction.	Stresses and Strains.	Design.
Thursday ..	Geometry.	Practical Construction.	History (Mediæval Indian and European).	Analytical Design.	Hygiene and Sanitation.
Friday ..	Applied Mechanics.	History (Greek and Roman periods).	Practical Construction.	Quantities.	Design.
Saturday ..	Freehand and Modelling.	Surveying and Levelling.	Application of the Orders and Indian Architecture to Design.	Analytical Design.	Heating, Lighting and Ventilation.


STRESS DIAGRAMS OF THE 200 FEET DIAMETER FERRO CONCRETE DOME
PRELIMINARY - DESIGN
STRESS DIAGRAM A
STRESS DIAGRAM B
HALF SECTION OF DOME
DESIGN FOR A TOMB OF A GREAT INDIAN PATRIOT

Design for a Tomb of a Great Indian Patriot to be Erected on the Bombay Maidan
(Subject was set by Sir Edwin Lutyens when in Bombay in 1928). With Reinforced Concrete Stress Diagram for the Dome
By J. K. Metha. Bombay School of Art : Fifth Year

Among our students are Brahmin and non-Brahmin Hindus, Jains, Zoroastrians, Mohamedans, Buddhists, and Jews, as well as Indian, Anglo-Indian and European Christians.

The students joining our school come mostly from our Bombay Presidency, which alone contains some 27,000,000 inhabitants, but as the school is the only one in India, we get students from places as far away as Delhi, Calcutta, Madras, and also from Burmah and Ceylon. This alone precludes the use of any one Indian language. English is the official language of Government and of the High Courts, and is, therefore, essential for a man practising architecture in any modern sense if he is to take his place on an equality with the medical, legal, and other learned professions, while the fact that at present there are practically no text-books on architectural or allied subjects in any Indian vernacular, is an additional reason for its adoption.

Perhaps, later on, in particular districts, schools of architecture may spring up where conditions would make it possible to teach at least the elementary principles of architecture and design in the vernaculars, and from such schools the most promising of the students might then be drafted to our central school, which is the most likely to advance its standard; indeed, such a school already exists at Baroda.

The almost universal poverty and low standard of general education is another real difficulty; some of our most promising students in the past have been drawn from the craftsman castes, whose traditional instincts have allowed them to rise despite their financial and educational handicaps. This traditional aptitude is an invaluable foundation on which to build the superstructure of such principles of modern planning and professional organisation as is necessary in this workaday world, even in India, if the son of the old craftsman is to take his proper place in the Indian national life of the near future, and our problem is so to equip him that we do not destroy his inborn perception of the indigenous forms out of which arose the various local architectures suitable to the different climatic conditions of the country and the lives of its inhabitants.

The chief danger of schools, curricula, text books, and examinations, is the introduction of a stereotyped course leading to mechanical reproduction rather than inspiration based on original research and understanding.

The Indian student is probably particularly prone to this danger, and it is necessary continually to modify the course first in one subject and then in another to avoid that result.

The introduction of an Indian revival on the lines of the Gothic revival would be a dangerously easy and temptingly spectacular course to pursue, but the object kept in view both by my predecessors in office and by myself has been rather to bring out the reasoning powers of the individual students, so that they may understand the inner meaning of the old forms and their original functions and may develop and modernise them, and thus gradually produce an architecture, Indian in character, but at the same time as suited to present day India as the old styles were to their own times and environment.

One further matter peculiar to this school which at times tends to make difficult the path of progress may perhaps be mentioned in conclusion. In the present very delicate stage of Indian Nationalist awakening any control from overseas is naturally looked upon with some jealousy lest it may mean a new form of domination and a curtailment of Indian aspiration towards independence.

We Britishers, who are working out here for our art, know that, at any rate as far as architecture is concerned, India's fears in this regard are groundless. We know that the Royal Institute of British Architects, being as wide as the Empire, has always been very anxious to encourage any signs of the renaissance of the wonderful architectural inheritance which India possesses.

Our confidence, however, is not always shared by our Indian confrères; therefore, in cherishing an association which can be of such inestimable advantage to the architectural profession in India in general and to our School in particular, we would emphasise the need for the continuation of that sympathetic consideration, on the part of both the Council and the Board of Architectural Education, for conditions and aspirations peculiar to India.

The Library

NOTES BY MEMBERS OF THE LITERATURE COMMITTEE ON RECENT PURCHASES

[These Notes are published without prejudice to a further and more detailed criticism]

FRAGMENS E ORNEMENS D'ARCHITECTURE, DESSINE'S A ROME D'APRES L'ANTIQITE. Par M. Charles Moreau. fo. Paris [1800].

This folio book of details from antique sources in and near Rome was very beautifully engraved about the year 1800. The author intended it to be a supplement to the work by Disgodetz. They comprise altars, vases, capitols, entablatures and architectural furniture of ornate character, and must have influenced the Imperial style of the period, so those of us interested in that style would o well to examine these plates for further information.

Plate No. 2 is unfortunately missing, but is given in the photographic reproduction, also acquired by the Library, and called " Architectural and Ornamental Details of Ancient Rome," measured and drawn by Charles Moreau, by the Architectural Book Publishing Company of New York.

The original work will be kept for reference, and the copy accessible for the loan collection. A. F. H.

GOTISCHE GLASMALEREI IN ÖSTERREICH BIS 4150. By Franz Kieslinger (Denkmäler Deutscher Kunst.) 4o. Zürich, Leipzig, Vienna [192–]. [Amalthea]. £5.

This beautifully illustrated volume is a revelation of the fine stained glass possessed by Austria. There are close upon a hundred plates, beside illustrations in the text, and although they purport to be merely examples of Austrian work and in no sense a representative record, they are all remarkable for their high quality. The medallion work of the early thirteenth century at Ardagger is particularly noteworthy. The book contains a very full topographical catalogue of the glass of Austria, and an unusually full list of glass painters from the twelfth to the sixteenth century.

ERRATA.

In the JOURNAL of 24 May, on page 510, in Professor Richardson's paper on " Architects' Drawings of 1800–1851," we have to apologise for a printer's error in the names of two of Sir Gilbert Scott's churches, St. Mary's *Stafford* and St. Nicholas, *Hamburg*.

Allied Societies

(The attention of Members of the Allied Societies is particularly called to this page)

Notice

THE ESSEX, CAMBRIDGE AND HERTFORDSHIRE SOCIETY OF ARCHITECTS.

WEST ESSEX CHAPTER.

Will members please note forthcoming events, due notice of which will be sent :—

10 *July*.—West Essex and Colchester, combined visit to St. Paul's Cathedral, by special invitation, to view the reconstruction work, drawings, models and the museum. Supper afterwards at the Old Chapter House.

19 *July*.—Proposed visit to Hatfield and Hatfield House.

18 *September*.—Visit to the Building Trades Exhibition by kind invitation of H. Greville Montgomery, Esq., J.P.

ARTHUR C. RUSSELL, L.R.I.B.A.,
Hon. Secretary.

Report

ROYAL INCORPORATION OF ARCHITECTS IN SCOTLAND.

ANNUAL CONVENTION.

THE Royal Incorporation of Architects in Scotland, at their annual convention in Aberdeen on Friday, 6 June, expressed the hope that the Government would authorise a public competition for plans for the public buildings to be erected on the Calton Hill site, Edinburgh.

Mr. T. F. Maclennan, Edinburgh, in moving the resolution, which was unanimously adopted, said the Edinburgh Association and Council had done a great deal of work in the matter, and had interviewed the Prime Minister regarding the site, which was one of the most prominent in the capital. The architects of Scotland were now meeting as an incorporation, and he did not think they should allow the opportunity to pass without taking some action. The Commission appointed had turned down the plans for the buildings to be erected on the site of the old Calton Jail made by the Office of Works as unsatisfactory. The architects should take advantage of the opportunity to rub in the necessity for an open competition for plans.

Mr. P. R. McLaren, Edinburgh, who seconded the resolution, said a protest from the Incorporation regarding the treatment of Scottish architects by the Government in respect of the plans would further their object in getting an open competition.

On the motion of Mr. D. A. Stewart, Perth, the retiring president, Mr. John Watson, Glasgow, was elected president, and installed in office.

Mr. P. H. Thom, Dundee, Mr. Wm. Williamson, Kirkcaldy, and Mr. James Lochhead, Hamilton, were elected representatives to the R.I.B.A. for the next session.

It was decided that the next conference should be held within the area of the Dundee Chapter.

The report of the Council showed that during the year seven Fellows, eighteen Associates, and twenty-two Students had been elected, and the total membership, including affiliates, was now 833.

Mr. W. L. Duncan, Turriff; Mr. D. A. Stewart, Perth; Mr. John Begg, Edinburgh; and Mr. Andrew Balfour, Glasgow—four members of Allied Societies in Scotland—have been elected to the R.I.B.A. Council.

The Rowand Anderson medal and scholarship of £100 was awarded to Mr. Hugh S. Macdonald, College of Art, Edinburgh; Mr. G. A. Cassells, 1, Park Gardens, Corstorphine, being awarded a certificate and £20. The Rutland prize (certificate and £30) was won by Mr. D. G. Hardie, The Manse, Cockpen, and the Incorporation prize for third year students was awarded to Mr. J. W. Laing, 30 Rutland Square, Edinburgh.

In his presidential address, Mr. Stewart paid a high tribute to the late Sir Robert Lorimer, and expressed gratification at the increase in membership.

CONVENTION DINNER.

Those attending the convention and their friends were entertained to dinner by the Aberdeen members of the Corporation in the Palace Hotel, the company numbering over a hundred.

Mr. John Begg, Edinburgh, proposed the "Town and Trade of Aberdeen," and Lord Provost Rust replied.

Mr. John Watson, Glasgow, the new president, said they should do what they could, when new and important buildings were in prospect, to see that an architect of outstanding merit was entrusted with the work.

"The Royal Institute of British Architects" was proposed by Mr. James B. Nicol, Mr. Ian MacAlister, secretary of the Institute, replying. Mr. R. G. Wilson, Aberdeen, gave "The Guests," to which Mr. George G. Nicol replied.

"The Royal Incorporation of Architects in Scotland" was given by Mr. Harry Townsend, director of the Aberdeen Art Gallery, who said that Aberdeen, having a beautiful and durable building material in granite, might be reluctant to accept modern synthetic materials.

Obituary

SIR EDWARD BRABROOK, C.B., F.S.A. [*Hon. Assoc.*].

We regret to record the recent death of Sir Edward Brabrook at the age of 91. He was perhaps chiefly known as the former Chief Registrar of Friendly Societies, and as an anthropologist and archæologist, but his interest in architecture was considerable and he was made an Hon. Associate R.I.B.A., having been transferred from the Honorary Membership class of the Society of Architects. He was mentally alert to the last, and his long memory and friendly nature were a delight to his many friends.

JAMES H. CRAIGIE [*F.*].

James Hoey Craigie, whose death occurred on 30 March, 1930, was at the date of his death senior partner in the firm of Clarke and Bell and James H. Craigie, Glasgow, with whom he commenced as chief draughtsman. In his student days he won, in 1893, the Alexander Thomson Memorial Studentship and visited Italy. The principal works with which he was connected (the earliest as chief draughtsman) were the reconstruction of the Sheriff Courthouses, Glasgow, the New Justiciary Buildings, Glasgow, the Grosvenor Restaurant, Kirkintilloch Parish Church, and Messrs. John Anderson's

Royal Polytechnic, Ltd. He served as Captain in the Royal Engineers during the war, holding a commission in the 7th Battalion of the Highland Light Infantry before the commencement, and being transferred to the R.E. shortly after the outbreak of war. He served as a D.O.R.E. in the Stirlingshire District for the first few years and in France during the last year of the war.

G. B.

W. FINNEGAN [*A.*].

We regret to report the death of Mr. W. Finnegan, on 18 March, 1930. Mr. Finnegan served three years' articles with Mr. P. J. Newby Vincent, of Southampton, afterwards being employed by him as an assistant, was appointed chief assistant to Messrs. Gordon and Gordon, Finsbury House, Blomfield Street, for one year, which enabled him to gain London experience. He joined the staff of the London County Council in June, 1925, and was allocated to the Mental Hospital branch of the General Section, where he was until ten days before his death which resulted from heart failure following double pneumonia. Mr. Finnegan was elected an Associate in December, 1929.

NOTES FROM THE MINUTES OF THE COUNCIL, 12 *May* 1930.

SIR EDWIN COOPER'S ELECTION TO THE ROYAL ACADEMY.

The cordial congratulations of the Council were conveyed to Sir Edwin Cooper on the well-merited honour conferred on him in his election as an Associate of the Royal Academy.

ADMISSION TO THE COMPETITIONS FOR THE R.I.B.A. PRIZES AND STUDENTSHIPS.

On the recommendation of the Board of Architectural Education, it was decided :

(1) to add a clause to the regulations governing admission to the competition for the Tite Prize to the effect that competitors must at least be registered Probationers R.I.B.A., and,

(2) to add a clause to the regulations governing entry to the competitions for :—

The Soane Medallion,
The Victory Scholarship,
The Owen Jones Studentship,
The Silver Medal for Essays,
The Henry Saxon Snell Prize,
The Alfred Bossom Travelling Studentship,
The Grissell Prize,
The Neale Bursary,
The Hunt Bursary,
The Godwin and Wimperis Bursary,

to the effect that competitors must at least be elected Students R.I.B.A.

R.I.B.A. STATUTORY EXAMINATION FOR DISTRICT SURVEYORS.

The Board reported that Mr. Gordon Welch had passed the Statutory Examination for District Surveyors, May 1930.

THE FEES FOR THE R.I.B.A. STATUTORY EXAMINATION AND THE R.I.B.A. EXAMINATION FOR BUILDING SURVEYORS.

Under the existing regulations each candidate for admission to the Examinations must pay a fee of £3 3s. Afterwards on receiving his Certificate of Competency, should it be granted to him, he must pay a further sum of £3 3s.

On the recommendation of the Board it was decided to abolish the fee of £3 3s. in connection with the issue of the Certificate of Competency, and that the Examination fee of £3 3s. should in future include the Examination and the issue of the Certificate of Competency.

DEPUTY HON. SECRETARY R.I.B.A. FOR WESTERN AUSTRALIA.

Mr. A. R. L. Wright [*L.*] was appointed as Deputy Hon. Secretary R.I.B.A. for Western Australia.

THE COURT OF GOVERNORS OF UNIVERSITY COLLEGE, HULL.

Mr. F. J. Horth [*F.*] was appointed to represent the R.I.B.A. on the Court of Governors of the University College of Hull in place of Mr. John Bilson, who has retired owing to ill-health.

THE NATIONAL ASSOCIATION FOR THE PREVENTION OF TUBERCULOSIS.

Mr. H. M. Fairweather [*F.*] was appointed to represent the R.I.B.A. at the Sixteenth Annual Conference of the National Association for the Prevention of Tuberculosis, which will be held in London from 3 to 5 July.

THE THAMES BRIDGES CONFERENCE.

Professor A. E. Richardson [*F.*] and Mr. W. Harding Thompson [*F.*] were appointed as members of the Thames Bridges Conference.

REVISION OF ORDNANCE MAPS.

Mr. W. Harding Thompson [*F.*], was appointed to represent the R.I.B.A. at a Conference called by the Town Planning Institute to urge the bringing up to date of ordnance maps.

BRITISH ENGINEERING STANDARDS ASSOCIATION : CONFERENCE ON THE STANDARDISATION OF GYPSUM PLASTER.

Mr. W. E. Vernon Crompton [*F.*] and Mr. Alan E. Munby [*F.*], were appointed to represent the R.I.B.A. at a Conference called by the B.E.S.A. to consider the standardisation of gypsum plaster.

THE DAYLIGHT ILLUMINATION SUB-COMMITTEE OF THE NATIONAL ILLUMINATION COMMITTEE OF GREAT BRITAIN.

Mr. P. J. Waldram [*L.*] was appointed as the R.I.B.A. representative on the Daylight Illumination Sub-Committee of the National Illumination Committee of Great Britain.

THE FELLOWSHIP.

The Council by a unanimous vote elected Mr. W. G. Allen and Mr. W. L. Duncan to the Fellowship.

MEMBERSHIP.

Election 16 *June* 1930.—Nominations for membership were approved as follows :—

As Fellows : 15 applications.
As Associates : 14 applications.

Reinstatement.—The following ex-members were reinstated :—

As Fellows : John Coulson Nicol.
John Robert Sutton.
As Associate : Cyril John Crossman.

APPLICATION FOR ELECTION AS LICENTIATE UNDER SECTION III (f) OF THE SUPPLEMENTAL CHARTER OF 1925.

One application was approved.

ARCHITECTURAL COMPETITIONS.

The Competitions Committee desire to point out that it would be of great assistance to them in their work if members would notify them immediately they hear of proposed competitions in any part of the country so that the Committee could at once get into touch with the promoters and guide them as to the correct procedure.

When conditions which are not in accordance with the R.I.B.A. Regulations have already been formulated by promoters it often necessitates lengthy and difficult negotiations before they can be amended to enable members to compete, and this would possibly be avoided if promoters were approached by the Competitions Committee at an early stage.

NEW BUILDING MATERIALS AND PREPARATIONS.

The Science Standing Committee wish to draw attention to the fact that information in the records of the Building Research Station, Garston, Watford, is freely available to any member of the architectural profession, and suggest that architects would be well advised, when considering the use of new materials and preparations of which they have had no previous experience, to apply to the Director for any information he can impart regarding their properties and application.

AUSTRALIAN ARCHITECTURAL STUDENTS' CLUB IN LONDON.

Australian students are advised that a Club has been formed for the purpose of facilitating study both in England and on the Continent. The Club meets at intervals when matters of interest are discussed for the mutual benefit of the members. All Australians are invited to join, and further particulars can be obtained from the Hon. Secretary of the Club, Mr. Eric Garthside, 6 Alberos Gardens, Golders Green, London, N.W.11.

CRICKET MATCH.

The Architectural Association Cricket Club have challenged the R.I.B.A. to a cricket match, to be played at Elstree on Wednesday, 2 July. The Hon. H. A. Pakington [*A.*] has kindly consented to raise the team to represent the R.I.B.A. and would be glad to hear from any playing members who would be willing to take part. Mr. Pakington's address is : 2 Bedford Square, W.C.

ARCHITECTS' GOLFING SOCIETY.

A proposal is on foot to form a golfing society in connection with the R.I.B.A. In the past members have from time to time arranged matches with the A.A., the Arts Club, the Master Builders' Federation, and other teams. It is now thought that these activities should be co-ordinated by the formation of an Architects' Golfing Society. The intention is to hold three or four meetings a year and to play matches against similar societies. The subscription to be 5s. per annum, students 2s. 6d.

The President, Sir Banister Fletcher, is personally interested in the proposal, and has most generously offered to give the Society, when formed, its first meeting at the Northwood Golf Course.

Will all architects wishing to join send their names, their lowest handicap at any club, and their subscription for the forthcoming year, to Mr. W. H. Ansell, at the R.I.B.A., 9 Conduit Street, W., he having consented to act as Honorary Secretary of the Society for the time being.

The Annual Elections

The results of the Annual Elections are recorded in the subjoined report of the Scrutineers, which was read at the General Meeting on Monday, 16th June :—

The Scrutineers appointed to count the votes for the election of the Council and Standing Committees for the Session 1930–1931 beg to report as follows :—

1,272 envelopes were received—482 from Fellows, 522 from Associates and 268 from Licentiates.

The result of the election is as follows :—

COUNCIL 1930–1931.

PRESIDENT.—Sir Banister Fletcher (unopposed).

PAST PRESIDENTS.—John Alfred Gotch (Kettering) (unopposed) ; Walter Tapper (unopposed).

VICE-PRESIDENTS.—*Elected :* Henry V. Ashley, 994 votes; Dr. Raymond Unwin, 920 ; Henry Martineau Fletcher, 870 ; Francis Jones, 869.——*Not elected :* William Gillbee Scott, 734.

1,231 Voting Papers were received, of which 19 were invalid.

HON. SECRETARY. — Sydney Decimus Kitson (unopposed).

MEMBERS OF COUNCIL.—FELLOWS.—*Elected :* Professor Charles Herbert Reilly, 700 votes ; Edwin Stanley Hall, 691 ; Sir Edwin Cooper, 673 ; William Curtis Green, 628 ; Herbert Tudor Buckland, 621 ; Herbert Duncan Searles-Wood, 524 ; Howard Morley Robertson, 412.——*Not Elected :* Duncan Alexander Campbell, 390 ; Harold Chalton Bradshaw, 350 ; Francis Thomas Verity, 349 ; Sir Alfred Brumwell Thomas, 326 ; John Alan Slater, 323 ; William Henry Ansell, 308 ; Henry Philip Burke Downing, 303 ; Charles Hilbert Strange, 220 ; William Thomas Curtis, 207 ; Louis Ambler, 198 ; Briant Alfred Poulter, 172 ; George Alfred Humphreys, 163 ; James Ernest Franck, 137. 1,231 voting papers were received, of which 55 were invalid.

ASSOCIATE MEMBERS OF COUNCIL.—*Elected :* Lieut.-Col. H. P. L. Cart de Lafontaine, 533 votes ; Michael Theodore Waterhouse, 470 ; Major Thomas Cecil Howitt, 386.—— *Not Elected :* Robert Norman Mackellar, 372 ; The Hon, Humphrey Arthur Pakington, 298 ; Charles Woodward, 291 ; Reginald Arthur Rix, 242 ; Austin Blomfield, 218 ; Alister Gladstone Macdonald, 190 ; Harry Valentine Milnes Emerson, 181 ; Eric Rowlstone Jarrett, 170. 1,231 voting papers were received, of which 42 were invalid.

LICENTIATE MEMBERS OF COUNCIL.—*Elected :* Lieut.-Col. Percy Alfred Hopkins, 737 votes ; Major Frederick William Rees, 500.——*Not Elected :* Captain Augustus Seymour Reeves, 471 ; Major Albert Leigh Abbott, 402. 1,231 voting papers were received, of which 18 were invalid.

REPRESENTATIVES OF ALLIED SOCIETIES IN THE UNITED KINGDOM OR THE IRISH FREE STATE.—*Six Representatives from the Northern Province of England.*—Lieut.-Col. Andrew Kerr Tasker (Northern Architectural Association); James Theodore Halliday (Manchester Society of Architects) ; Professor Leslie Patrick Abercrombie (Liverpool Architectural Society) ; George Dudley Harbron (York and East Yorkshire Architectural Society) ; George Herbert Foggitt (West Yorkshire Architectural Society); Walter Gerard Buck (Sheffield, South Yorkshire and District Society of Architects and Surveyors). *Five Representatives from the Midland Province of England.*—Albert Thomas Butler (Birmingham Architectural Association) ; Albert Herbert (Leicester and Leicestershire Society of Architects) ; Basil Charlton Deacon (Northamptonshire, Bedfordshire and Huntingdonshire Association of Architects) ; George Morley Eaton (Nottingham and Derby Architectural Society) ; Ernest Hugh Buckingham (Norfolk and Norwich Association of Architects) ; *Four Representatives from the Southern Province of England.*— Benjamin Priestley Shires (Devon and Cornwall Architectural

Society); Harold Brakspear (Wessex Society of Architects); Harry Hutt (Berks, Bucks and Oxon Architectural Association); John Arthur Smith (Hampshire and Isle of Wight Architectural Association). *Four Representatives from Allied Societies in Scotland*, nominated by the Council of the Royal Incorporation of Architects in Scotland.—Andrew Balfour (Glasgow); John Begg (Edinburgh); William Liddle Duncan (Aberdeen); Donald Alexander Stewart (Dundee). *One Representative of the South Wales Institute of Architects.*—Thomas Alwyn Lloyd (Cardiff). *Two Representatives of Allied Societies in Ireland.*—Frederick George Hicks (Royal Institute of the Architects of Ireland); Robert Hanna Gibson (Ulster Society of Architects).

REPRESENTATIVES OF ALLIED SOCIETIES IN THE BRITISH DOMINIONS OVERSEAS.—To be nominated by the Council of each of the following:—The Royal Architectural Institute of Canada; The Australian Institute of Architects; The New Zealand Institute of Architects; The Institute of South African Architects.

REPRESENTATIVE OF THE ARCHITECTURAL ASSOCIATION (LONDON).—George Grey Wornum (unopposed).

REPRESENTATIVE OF THE ASSOCIATION OF ARCHITECTS, SURVEYORS AND TECHNICAL ASSISTANTS.—William Henry Hamlyn (unopposed).

CHAIRMAN OF THE BOARD OF ARCHITECTURAL EDUCATION.—Leo Sylvester Sullivan (unopposed).

CHAIRMEN OF THE ART, LITERATURE, PRACTICE AND SCIENCE STANDING COMMITTEES.

HONORARY AUDITORS.—Ernest James Wedlock Hider (unopposed); Geoffrey Ronald Gilbertson Topham (unopposed).

ART STANDING COMMITTEE.—FELLOWS.—*Elected:* Arthur Keen, 894 votes; M. H. Baillie Scott, 887; Charles Henry Holden, 874; Edward Maufe, 857; Francis Winton Newman 850; Harry Stuart Goodhart-Rendel, 788; Ernest Chawner Bewlay, 781; Harold Chalton Bradshaw, 751; Charles Frederick William Dening, 732; Louis Emanuel J. G. de Soissons, 706.——*Not Elected:* Professor Stanley Davenport Adshead, 701; Oswald Partridge Milne, 670; Charles Holloway James, 655; Arthur Bedford Knapp-Fisher, 483; Robert Lowry, 462. 1,196 voting papers were received, of which 10 were invalid.

ASSOCIATES.—*Elected:* Ernest Berry Webber, 825 votes; Leonard Holcombe Bucknell, 752; The Hon. Humphrey Arthur Pakington, 675; Michael John Tapper, 672; Edwin Maxwell Fry, 646; Ronald Aver Duncan, 616.——*Not Elected:* Michael Theodore Waterhouse, 579; Frederic Edward Towndrow, 564; John Clifford Procter, 494; Stephen Rowland Pierce, 475; Charles Douglas St. Leger, 253. 1,196 voting papers were received, of which 13 were invalid.

LICENTIATES.—*Elected:* Archibald Stuart Soutar, 927 votes; Francis Robert Taylor, 861; Samuel George Short, 701.——*Not Elected:* Reginald Minton Taylor, 577. 1,196 voting papers were received, of which 35 were invalid.

LITERATURE STANDING COMMITTEE.—FELLOWS.—*Elected:* Martin Shaw Briggs, 999 votes; Basil Oliver, 982; John Murray Easton, 899; Charles Sydney Spooner, 889; David Theodore Fyfe, 867; Frederick Chatterton, 858; Henry Castree Hughes, 829; Arthur Edward Henderson, 817; Lionel Godfrey Pearson, 795; Arthur Stanley George Butler, 761.——*Not Elected:* Thomas Falconer, 707; Guy Donne Gordon Hake, 703; Andrew Laurence Noel Russell, 664. 1,187 voting papers were received, of which 9 were invalid.

ASSOCIATES.—*Elected:* Grahame Burnell Tubbs, 865 votes; Arthur Trystan Edwards, 836; Professor Frank Stephen Granger, 813; Harold William Chester, 765; Lieut.-Col. H. P. L. Cart de Lafontaine, 715; Eric Rowlstone Jarrett, 709.——*Not Elected:* Geoffrey Alan Jellicoe, 619; Miss Eleanor Katherine Dorothy Hughes, 579; James Maclaren Ross, 543. 1,187 voting papers were received, of which 14 were invalid.

LICENTIATES.—*Elected:* Frederick Herbert Mansford, 845 votes; Arthur Joseph Penty, 795; Arthur Baldwin Hayward, 751.——*Not Elected.*—Edwin Morcombe Hick, 723. 1,187 voting papers were received, of which 27 were invalid.

PRACTICE STANDING COMMITTEE.—FELLOWS.—*Elected:* Henry V. Ashley, 745 votes; Harry Smith Fairhurst, 639; Percy Edward Thomas, 627; George Churchus Lawrence, 608; Edmund Bertram Kirby, 595; Sydney Joseph Tatchell, 583; Francis Thomas Verity, 556; Herbert Duncan Searles-Wood, 540; William Ernest Watson, 513; John Alan Slater, 512.——*Not Elected:* William Henry Gunton, 425; David Barclay Niven, 412; John Swarbrick, 366; William Henry Dashwood Caple, 311; Herbert Arthur Welch, 282; Augustine Alban Hamilton Scott, 263; Digby Lewis Solomon, 241; Charles Nicholas, 241; James Ernest Franck, 236; George Arthur Lansdown, 209; Alexander Burnett Brown, 202. 1,180 voting papers were received, of which 41 were invalid.

ASSOCIATES.—*Elected:* John Douglas Scott, 919 votes; Edward Unwin, 827; Robert Norman Mackellar, 806; Charles Woodward, 795; John Batty, 773; Christopher James Fawcett Martindale, 702.——*Not Elected:* William Henry Hamlyn, 700; Frederick Richard Jelley, 594. 1,180 voting papers were received, of which 20 were invalid.

LICENTIATES.—*Elected:* Frederick Roger Betenson, 892 votes; Captain Augustus Seymour Reeves, 775; Joseph William Dennington, 773.——*Not Elected:* Malcolm Waverley Matts, 619. 1,180 voting papers were received, of which 29 were invalid.

SCIENCE STANDING COMMITTEE.—FELLOWS.—*Elected:* Dr. Raymond Unwin, 1,005 votes; Major Charles Frederick Skipper, 898; Robert John Angel, 889; Alan Edward Munby, 871; Arthur John Hope, 846; William Alexander Harvey, 845; Samuel Pointon Taylor, 841; Edward John Partridge, 792; George Reginald Farrow, 787; Thomas Edward Scott, 700. *Not Elected:* Leonard Rome Guthrie, 681; Harry Hutt, 675; William Thomas Benslyn, 607; William Edward Vernon Crompton, 539. 1,194 voting papers were received, of which 10 were invalid.

ASSOCIATES.—*Elected:* Hope Bagenal, 1,046 votes; Arnold Fielder Hooper, 922; Eric Leslie Bird, 858; Charles Stanley White, 825; Edwin Gunn, 822; John Archibald Bessant, 786.——*Not Elected:* Alfred Ernest Mayhew, 557; William Kaula, 555. 1,194 voting papers were received, of which 15 were invalid.

LICENTIATES.—*Elected:* Alfred Henry Barnes, 950 votes; Lieut-Col. Percy Alfred Hopkins, 807; Percy John Waldram, 801.——*Not Elected:* George Nathaniel Kent, 677. 1,194 voting papers were received, of which 17 were invalid.

Scrutineers
E. J. W. HIDER [*F.*], *Chairman.*
ERNEST G. ALLEN [*F.*]
GEOFFREY C. WILSON [*F.*]
RONALD TOPHAM [*A.*]
CHARLES H. FREEMAN [*L.*]

13 June 1930.

Notices

THE RESTORATION OF ST. PAUL'S CATHEDRAL. SPECIAL GENERAL MEETING AND EXHIBITION.

MONDAY, 23 JUNE 1930, AT 8.30 P.M.

A Special General Meeting will be held on Monday, 23 June 1930, at 8.30 p.m., when a lecture on "The Restoration of St. Paul's Cathedral" will be delivered

by Captain C. Stanley Peach [*F.*], and Mr. W. Godfrey Allen [*F.*].

The lecture will be illustrated by lantern slides and by an exhibition of models, masonry specimens, drawings and photographs.

The exhibition will be open daily in the R.I.B.A. Galleries from Monday, 23 June to Saturday, 28 June inclusive, between the hours of 10 a.m. and 8 p.m. (Saturday, 5 p.m.).

MEMBERS' TOUR TO THE UNITED STATES AND CANADA.

In view of the success which attended the visit to the United States and Canada of a party of members of the R.I.B.A. last year, and as many members who were unable to avail themselves of that opportunity expressed a desire to undertake such a trip on a future occasion, it has been decided to organise a further party this year.

The numerous advantages to be gained by undertaking a visit to the United States and Canada from an architectural point of view will be obvious, particularly when the visit is made in company with fellow-members of the Institute.

The suggested tour will include New York, Philadelphia, Washington, Detroit, Niagara Falls, Toronto, Ottawa and Montreal, and notes regarding the places of interest from an architectural standpoint, compiled by Mr. Percy E. Thomas, O.B.E., F.R.I.B.A., the leader of last year's party, will be available for members.

The duration of the trip will be approximately one month, and the cost, including cabin class accommodation on the Atlantic steamers, hotel accommodation in the United States and Canada, rail fares, etc., will be about £80. This amount is exclusive of meals ashore, gratuities, transfer of passengers and baggage between stations, steamers, hotels, etc., and sight-seeing trips.

The party will travel from Liverpool for New York by the Cunard Liner *Samaria* on 5 July, returning by the *Ascania* from Montreal to Plymouth and London on 25 July.

Relatives and friends of members will be welcomed.

Members interested are requested to apply to Mr. H. T. Leese, The Cunard Steamship Company, Ltd., 26-27, Cockspur Street, London, S.W.1, who will be pleased to forward a complete itinerary, etc., on request.

OVERSEAS APPOINTMENTS.

Members contemplating applying for appointments overseas are recommended to communicate with the Secretary R.I.B.A., who will supply them with any available information respecting conditions of employment, cost of living, climatic conditions, etc.

WILLIAM H. HAMLYN,
Hon. Sec. R.I.B.A., Salaried Members' Committee.

ELECTION OF MEMBERS, 1 DECEMBER, 1930.

Associates who are eligible and desirous of transferring to the Fellowship are reminded that if they wish to take advantage of the election to take place on 1 December 1930, they should send the necessary nomination forms to the Secretary R.I.B.A. not later than Saturday, 27 September 1930.

LICENTIATES AND THE FELLOWSHIP.

The attention of Licentiates is called to the provisions of Section IV, Clause 4 (*b*) and (*cii*) of the Supplemental Charter of 1925. Licentiates who are eligible and desirous of transferring to the Fellowship can obtain full particulars on application to the Secretary R.I.B.A., stating the clause under which they propose to apply for nomination.

R.I.B.A. STATUTORY EXAMINATION FOR THE OFFICE OF DISTRICT SURVEYOR AND THE EXAMINATION FOR THE OFFICE OF BUILDING SURVEYOR.

The R.I.B.A. Statutory Examination for the office of District Surveyor under the London Building Acts, and the examination for the office of Building Surveyor under Local Authorities, will be held at the R.I.B.A., London, on 15, 16 and 17 October 1930.

The closing date for receiving applications for admission to the examinations, accompanied by the fee of £3 3s., is 24 September.

Full particulars of the examinations and application forms can be obtained from the Secretary R.I.B.A.

Competitions

BANGOR (CO. DOWN) LAY-OUT OF SEA-FRONT.

The Bangor (Co. Down) Borough Council invite architects and town planners to submit, in open competition, designs for the lay-out of the sea-front in the Borough.

Assessor: Professor Patrick Abercrombie, M.A. [*F.*].

Premiums: £150 and £50.

Last day for receiving designs, 1 September 1930.

Conditions of the competition may be obtained on application to Mr. J. Milliken, Town Clerk, Borough Council Offices, Bangor, Co. Down. Deposit £1 1s.

BARNSTAPLE: OPEN AIR SWIMMING BATH.

The Competitions Committee desire to call the attention of members to the fact that the conditions of the above competition are not in accordance with the regulations of the R.I.B.A. The Competitions Committee are in negotiation with the promoters in the hope of securing an amendment. In the meantime members should not take part in the competition.

CARLISLE: ENGLISH STREET IMPROVEMENT.

The Corporation of the City of Carlisle invite architects to submit, in open competition, designs for the façade to English Street and the Victoria Viaduct, suitable for Shops and Business Premises.

Assessor: Mr. Francis Jones [*F.*].

Premiums: £300, £200 and £100.

Conditions of the competition may be obtained on application to Mr. Percy Dalton, A.M.Inst.C.E. [*A.*], City Engineer, 18 Fisher Street, Carlisle. Deposit £1 1s.

CHULMLEIGH, DEVON: PROPOSED MINISTER'S HOUSE.

The Competitions Committee desire to call the attention of members to the fact that the conditions of the above competition are not in accordance with the regulations of the R.I.B.A. The Competitions Committee are in negotiation with the promoters in the hope of securing an amendment. In the meantime members should not take part in the competition.

LIVERPOOL: DEVELOPMENT OF SITE.

The General Building Syndicate, Ltd., invite architects to submit, in open competition, schemes for the development of a site at Liverpool fronting St. Johns Lane, Queen Square and Roe Street.

Premiums: £250, £100 and £50.

Conditions of the competition may be obtained on application to The Secretary, General Building Syndicate, Ltd., 36 St. Martin's Lane, London, W.C.2. Deposit £2 2s. [Conditions have not yet been received.]

LIVERPOOL: PROPOSED PIER HEAD IMPROVEMENTS.

The Liverpool City Council propose to offer premiums of 1,000 guineas and 500 guineas in connection with a competition for the improvement of the amenities of the Pier Head. [Conditions are not yet available.]

LUTON: TOWN HALL.

The Town Council of Luton invite architects to submit, in open competition, designs for a new Town Hall and Municipal Buildings, at a cost of £250,000.

Assessor: Sir A. Brumwell Thomas [*F.*].

Premiums: £500, £300, £200, and £100.

Last day for receiving designs, 31 July 1930.

Conditions of the competition may be obtained on application to Mr. W. Smith, Town Clerk, 2 Upper George Street, Luton. Deposit £2 2s.

RAMSEY, ISLE OF MAN: GRAMMAR SCHOOL.

The Education Authority of the Isle of Man invite architects to submit, in open competition, designs for a new Grammar School to be erected at Ramsey.

Assessor: Mr. T. Taliesin Rees [*F.*].

Last day for receiving designs: 30 September 1930.

Conditions of the competition may be obtained on application (before 1 July 1930) to Mr. T. R. Lewin, Clerk to the Authority, Education Office, Strand Street, Douglas, I.O.M. Deposit £1 1s.

[Conditions have not yet been received].

WEST HUMBERSTONE: LIBRARY.

The Leicester Corporation propose to invite local architects to submit, in competition, designs for a Library, to be erected at West Humberstone.

Assessor: Mr. Hugh Gold [*F.*].

Premiums: £75, £50 and £25.

[Conditions are not yet available.]

WORTHING: MUNICIPAL BUILDINGS.

The Corporation of Worthing invite architects to submit, in open competition, designs for new Municipal Buildings, to be erected in Chapel Road, Worthing.

Assessor: Mr. Henry V. Ashley, V.-P.R.I.B.A.

Premiums: £350, £250, £150 and £50.

Last day for receiving designs, 5 July 1930.

Conditions of the competition may be obtained on application to Mr. J. Kennedy Allerton, Town Clerk, Worthing. Deposit £1 1s.

Members' Column

CHANGE OF ADDRESS.

MR. HASTWELL GRAYSON, M.A., F.R.I.B.A., and Mr. Leonard Barnish, F.R.I.B.A., have removed their office from 606 Royal Liver Building, Liverpool, to 58 Rodney Street, Liverpool. Telephone—Royal 1976.

PARTNERSHIP WANTED.

A.R.I.B.A., qualified at recognised University School, 28 years old, seeks partnership. Good designer and draughtsman, and competent at detailing. Holds City and Guilds Diploma in Quantity Surveying. Six years 1st class office experience; at present with very well-known London architect. Extensively travelled, and has studied on the Continent. Public School. Capital available.—Apply Box 1360, c/o The Secretary R.I.B.A., 9 Conduit Street, W.1.

PRACTICE WANTED.

MEMBER wishes to purchase an old established practice, West of England or South Coast preferred, or would entertain a partnership in a firm of standing.—Apply Box 2640, c/o The Secretary R.I.B.A., 9 Conduit Street, W.1.

PARTNERSHIP OR PRACTICE WANTED.

YOUNG Associate, with small practice in London, chiefly domestic, is desirous of obtaining a partnership or purchasing an established practice in London or South-Eastern district. Capital available. —Apply Box 1160, c/o The Secretary R.I.B.A., 9 Conduit Street, W.1.

OFFICE ACCOMMODATION WANTED.

FELLOW, practising in London, desires offices either in the West End or St. James's. Would consider sharing drawing office if private office available for own use.—Apply Box 7746, c/o The Secretary R.I.B.A., 9 Conduit Street, W.1.

Minutes XVII

SESSION 1929–1930.

At the Fifteenth General Meeting (Business) of the Session, 1929–1930, held on Monday, 16 June 1930, at 8.0 p.m.,

Sir Banister Fletcher, F.S.A., President, in the Chair.

The attendance book was signed by 16 Fellows (including 9 members of Council), 9 Associates (including 3 members of Council), and 4 Licentiates (including 1 member of Council).

The Minutes of the Ordinary General Meeting held on 26 May 1930, having been published in the JOURNAL, were taken as read, confirmed, and signed as correct.

The Hon. Secretary announced the decease of:—

The Rt. Rev. G. F. Browne, transferred to the Honorary Associateship 1926,

William Thomas Mynors Walker, elected Fellow 1906,

Reginald Bruce, elected Associate 1915,

John Robert Earnshaw, elected Associate 1894,

Ernest James Hammond, transferred to Licentiate Class 1925,

Brian Edward FitzGerald Sheehy, transferred to Licentiate Class 1925,

William Youlten, transferred to Licentiate Class 1925,

and it was Resolved that the regrets of the Institute for their loss be entered on the Minutes and that a message of sympathy and condolence be conveyed to their relatives.

The following members attending for the first time since their election were formally admitted by the President:—

Mr. T. B. M. Wightman [*F.*],

Mr. J. W. S. Monson [*A.*].

The following candidates for membership were elected by show of hands :—

AS FELLOWS (15).

BENJAMIN : ASHLEY FLORIAN [*A.* 1906].
BUCKNELL : LEONARD HOLCOMBE [*A.* 1913].
CHALLEN : HAROLD BERTRAM [*A.* 1921].
CLARK : CHARLES WALTER, P.A.S.I. [*A.* 1908].
CLARKE : JAMES ANDREW, P.A.S.I. [*A.* 1919], Newcastle.
CLIFTON : EDWARD NOEL, B.A.Cantab., P.A.S.I. [*A.* 1921].
JACKSON : GORDON WALLET [*A.* 1925], Bournemouth.
SUTHERLAND : THOMAS SCOTT [*A.* 1924], Aberdeen.

And the following Licentiates who have passed the qualifying Examination :—

DOWTON : WILLIAM LEONARD.
GREENEN : WALLACE AUSTIN, Bournemouth.
LAWRENCE : HENRY MATTHEW, Birmingham.
WALKLEY : ALBION HENRY, Melbourne, Victoria, Australia.

And the following Licentiates who are qualified under Section IV, Clause 4 c (ii) of the Supplemental Charter of 1925 :—

BRAGG : HENRY.
CANTELL : MARK TAYLOR, Hollywood, Los Angeles, California.
ROBERTSON : ROBERT.

AS ASSOCIATES (14).

BENNETT : WILLIAM GARNSWORTHY [Special], Perth, W. Australia.
BEVERIDGE : GILBERT ROBERT [Passed five years' course at the Architectural Association. Exempted from Final Examination after passing Examination in Professional Practice], Leek, Staffs.
COWIN : JOHN NORRIS, B.Arch.Liverpool [Passed five years' course at the Liverpool School of Architecture, University of Liverpool. Exempted from Final Examination after passing Examination in Professional Practice].
DUNCAN : DAVID RONALD [Final].
HILLIER : NORMAN BASIL [Passed five years' joint course at the Architectural Association and the Liverpool School of Architecture, University of Liverpool. Exempted from Final Examination after passing Examination in Professional Practice], Winchester.
KELHAM : HARRY WILKINSON [Passed five years' course at the Architectural Association. Exempted from Final Examination after passing Examination in Professional Practice], Stamford, Lincs.
MCINTOSH : WILLIAM GORDON [Passed five years' course at the University of Witwatersrand, Johannesburg. Exempted from Final Examination after passing Examination in Professional Practice], Pretoria, Transvaal.
MACLEOD : ALEXANDER NORMAN [Passed five years' course at McGill University, Montreal. Exempted from Final Examination after passing Examination in Professional Practice], Montreal, Canada.
ORFEUR : RONALD FRANCIS [Final], Welwyn Garden City.
RITCHIE : JOHN ARCHIBALD [Passed five years' course at the Architectural Association. Exempted from Final Examination after passing Examination in Professional Practice], Shanghai.
ROBINSON : AUBYN PEART [Final].
TOUGH : ALEXANDER [Passed five years' course at Robert Gordon's Colleges, Aberdeen. Exempted from Final Examination after passing Examination in Professional Practice].
WAKELIN : RICHARD NEWTON [Special].
WALL : MARY LILLIAN JOY (Miss) [Passed five years' course at the Architectural Association. Exempted from Final Examination after passing Examination in Professional Practice].

The Scrutineers' Report, giving the results of the Annual Election of the Council, the Standing Committees and the Hon. Auditors, was read.

The President declared the Officers, the Members of the Council, the Standing Committees and the Hon. Auditors duly elected in accordance therewith.

On the motion of the President a vote of thanks was passed by acclamation to the Scrutineers for their labours in connection with the elections.

The formal business of the meeting having concluded, the President invited members to join in a private and informal discussion on subjects of professional interest or difficulty.

The proceedings closed at 9.0 p.m.

ARCHITECTS' BENEVOLENT SOCIETY
(*Insurance Department*).
HOUSE PURCHASE SCHEME
(for property in Great Britain only).

The Society is able, through the services of a leading Assurance Office, to assist an Architect (or his client) in securing the capital for the purchase of a house for his own occupation, on the following terms :—

AMOUNT OF LOAN.

Property value exceeding £666, but not exceeding £2,500, 75 per cent. of the value.

Property value exceeding £2,500, but not exceeding £4,500, 66⅔ per cent. of the value.

The value of the property is that certified by the Surveyor employed by the Office.

RATE OF INTEREST

In respect of loans not exceeding £2,000 5½ per cent. gross.
" " in excess of " 5¾ " "

REPAYMENT.

By means of an Endowment Assurance which discharges the loan at the end of 15 or 20 years, or at the *earlier death* of the borrower.

SPECIAL CONCESSION TO ARCHITECTS.

In the case of houses in course of erection, it has been arranged that, provided the Plan and Specification have been approved by the Surveyor acting for the Office, and the amount of the loan agreed upon, and subject to the house being completed in accordance therewith, ONE HALF of the loan will be advanced on a certificate from the Office's Surveyor that the walls of the house are erected and the roof on and covered in.

NOTE.—In 1928, over £20,000 was loaned to architects under this scheme, and as a result over £100 was handed to the Benevolent Fund.

If a quotation is required, kindly send details of your age next birthday, approximate value of house and its exact situation, to the Secretary Architects' Benevolent Society, 9 Conduit Street, London, W.

Members sending remittances by postal order for subscriptions or Institute publications are warned of the necessity of complying with Post Office Regulations with regard to this method of payment. Postal orders should be made payable to the Secretary R.I.B.A., and crossed.

It is desired to point out that the opinions of writers of articles and letters which appear in the R.I.B.A. JOURNAL must be taken as the individual opinions of their authors and not as representative expression of the Institute.

R.I.B.A. JOURNAL.

DATES OF PUBLICATION.—1930.—12 July; 9 August; 20 September; 18 October.

Rates of Wages in the Building Trade in Great Britain.

Every endeavour is made to ensure accuracy, but the Royal Institute cannot be responsible for errors.

The following tables extracted from the *Ministry of Labour Gazette* show the present rates of wages as agreed upon by the National Wages and Conditions Council for the Building Industry.

The rates of wages in the London district within a 12-mile radius of Charing Cross are 1*s.* 9½*d.* for masons (fixers), 1*s.* 7½*d.* for painters, 1*s.* 8½*d.* for other craftsmen (bricklayers, masons (banker hands), carpenters and joiners, woodcutting machinists, slaters and tilers, and plumbers), and 1*s.* 3½*d.* for labourers, and ½*d.* per hour less for those working between 12 and 15 miles from Charing Cross. ‡Plasterers (see note below).

Grade.	Craftsmen.	Labourers.
	s. *d.*	*s.* *d.*
A	1 7	1 2¼
A1	1 6½	1 2
A2	1 6	1 1½
A3	1 5½	1 1¼
B	1 5	1 0¾
B1	1 4½	1 0½
B2	1 4	1 0
B3	1 3½	11¾
C	1 3	11½
C1	1 2½	11

GRADING OF TOWNS.

The towns in which the above Grade rates have been reported to apply are shown below, divided into their main Area Groups. The principal exceptions are indicated in the notes appended to each Group. In towns marked * the rate for painters is 1*d.* less than that paid to other craftsmen, and in those marked † it is ½*d.* less than the other craftsmen's rate. The differential rates indicated for plumbers and labourers in certain towns have not received the approval of the National Joint Council, but are reported as representing the current rates in the instances mentioned.

NORTHERN COUNTIES:—

Grade A.—Blyth, Darlington, Durham, Gateshead, Hartlepools, Middlesbrough, Newcastle, North and South Shields, Stockton, Sunderland, Tees-side, Tyne district. **Grade A1.**—Annfield Plain, Aycliffe, Bishop Auckland, Blackhall Mill, Blackhill, Brandon, Burnhope, Burnopfield, Consett, Coundon, Craghead, Crook, Cockfield, Dipton, Ebchester, Esh, Esh Winning, Etherley, Evenwood, Ferryhill, Hamsterley Colliery, Hunwick, Knitsley, Lanchester, Langley Park, Leadgate, Medomsley, Shildon, Shotley Bridge, South Moor, Spennymoor, Stanley, Tanfield, Tantobie, Waterhouses, West Auckland, Willington, Witton. **Grade A2.**—Alnwick, Amble, Ashington, Bedlington, Berwick, Morpeth, Newbiggin, Seahouses, Wooler. **Grade A3.**—Barnard Castle, Frosterley, Hamsterley, Stanhope, Tow Law, Wolsingham.

YORKSHIRE:—

Grade A.—Barnsley, Batley, Beverley, Bingley, Bradford, Brighouse, Calder Valley, Castleford, Colne Valley, Crosshills, Dewsbury, Doncaster, Grimsby, Halifax, Harrogate, Hebden Bridge, Holmfirth, Huddersfield, Hull, Ilkley, Immingham, Keighley, Leeds, Mexborough, Morley, Normanton, Ossett and Horbury, Penistone, Pontefract, Pudsey, Rotherham, Scunthorpe, Selby, Sheffield, Shipley, Sowerby Bridge, Spen Valley, Stocksbridge, Wakefield, Wombwell, Yeadon, York. **Grade A1.** Bridlington, Scarborough. **Grade A2.**—Barnoldswick, Goole, Skipton, Whitby. **Grade A3.**—Driffield, Filey, Malton, Worksop.

[NOTE.—*Under agreements arrived at by the National Joint Council for the Plastering Industry a rate of* 1*s.* 7*d. has previously been fixed for plasterers at Bradford,* 1*s.* 8*d. at Leeds and* 1*s.* 7½*d. at Sheffield. It is understood that the National Joint Council for the Building Industry was not a party to these agreements.*]

NORTH-WESTERN COUNTIES WITH NORTH WALES:—

Grade A.—Accrington, Alderley Edge, Altrincham, Ashton-under-Lyne, Barrow-in-Furness, Bispham, Blackburn, Blackpool, Blackrod, Bolton, Brierfield, Broughton (Ches.), Buckley, Burnley, Bury, Carlisle, Carnforth, Chester, Chorley, Cleveleys, Clitheroe, Colne, Connahs Quay, Dalton, Darwen, Fleetwood, Flint, Frodsham, Garstang, Glossop, Hawarden, Haydock, Heysham, Heywood, Higher Kinnerton, Hornby, Horwich, Kirkham, Lancaster, Leigh, Leyland, Longridge, Lytham, Manchester, Middleton, Mold, Morecambe, Nelson, Northop, Oldham, Ormskirk, Poulton, Prescot, Preston, Queensferry, Radcliffe, Rainford, Rochdale, Rossendale Valley, Runcorn, St. Annes-on-Sea, St. Helens, Shotton, Silverdale, Southport, Stockport, Thornton, Todmorden, Warrington (plumbers 1*s.* 8*d.*), Westhoughton, Whalley, Widnes, Wigan, Wilmslow. **Grade A1.**—Bollington, Buxton, Chapel-en-le-Frith, Congleton, Disley, Hayfield, Macclesfield, New Mills, Prestbury, Whaley Bridge, Wrexham. **Grade A2.**—Audlem, Crewe, Knutsford, Malpas, Middlewich, Nantwich, Northwich, Sandbach. **Grade A3.**—Askam, Bakewell, Broughton-in-Furness, Cleator Moor, Coniston, Egremont, Grange-over-Sands, Harrington, Market Drayton, Maryport, Millom, Ulverston, Whitehaven, Workington. **Grade B.**—Ambleside, Cockermouth, Grasmere, Kendal, Keswick, Penrith, Windermere. **Grade B1.**—Bala, Bangor, Caernarvon, Pwllheli, Towyn. **Grade B3.**—Llanidloes.

[NOTE.—*In the Liverpool and Birkenhead districts the rates remain unaltered at* 1*s.* 8½*d. per hour plus* 2*s. per week "tool money" for bricklayers, masons, carpenters and joiners and plumbers;* 1*s.* 9½*d. per hour for plasterers;* 1*s.* 8½*d. per hour for other craftsmen, and* 1*s.* 2¾*d. per hour for labourers. Under an agreement made between the local employers of plasterers and the National Association of Plasterers, Granolithic and Cement Workers a rate of* 1*s.* 7½*d. had previously been fixed for plasterers at Southport. It is understood that this rate remains unaltered within the limits of operation of the arrangement to which the National Joint Council for the Building Industry was not a party.*]

‡ On 1st February 1929 the standard rate for plasterers in the London district (within a 15-mile radius of Charing Cross) was fixed at 1*s.* 11½*d.* per hour. This change took effect under an arrangement agreed upon between the National Association of Master Plasterers (London District) and the National Association of Plasterers, Granolithic and Cement Workers. The National Joint Council for the Building Industry was not a party to the arrangement.

RATES OF WAGES IN THE BUILDING TRADE IN GREAT BRITAIN.

MIDLAND COUNTIES :—

Grade A.—Alfreton and Ripley, Belper, Birmingham, Blackheath, Burslem, Burton-on-Trent, Chesterfield, Coalville, Coventry, Derby, Dudley district (including Dudley Port, Gornal, Sedgley, and Tipton), Eastwood, Fenton, Hanley, Heanor, Hinckley, Ilkeston, Kenilworth, Langley Mill, Leek, Leicester, Lincoln, Long Eaton, Longton, Loughborough, Mansfield and East Kirby, Newcastle-under-Lyme, Nottingham, Nuneaton, Oldbury, Rugby, Stoke-on-Trent, Sutton Coldfield, Sutton-in-Ashfield, Swadlincote, Swanwick, Tunstall, Walsall district (including Wednesbury and Darlaston), West Bromwich, Wolverhampton district (including Willenhall and Bilston). **Grade A1.**—Northampton, Stourbridge district (including Brierley Hill, Cradley, Cradley Heath, Halesowen, Lye, Old Hill and Quarry Bank), Tamworth. **Grade A2.**—Bewdley, Bromsgrove, Kettering, Kidderminster and Stourport, Knowle, Leamington and Warwick, Melton Mowbray, Peterborough, Redditch, Shrewsbury, Solihull, Stafford, Worcester. **Grade A3.**—Atherstone, Boston, Droitwich, Gainsborough, Grantham, Lichfield, Malvern, Market Harborough, Matlock, Newark, Oakengates, Retford, Rugeley, Ruskington, Shifnal, Skegness, Sleaford, Southwell, Stamford, Stratford-on-Avon, Wellingborough, Wellington. **Grade B.**—Oakham, Oundle, Rushden. **Grade B1.**—Bridgnorth, Spalding, Uttoxeter. **Grade B2.**—Ashbourne, Church Stretton, Horncastle, Ludlow, Newport.

[NOTE.—*Under an agreement made between the local employers of plasterers and the National Association of Plasterers, Granolithic and Cement Workers a rate of* 1s. 8*d. per hour had previously been fixed for plasterers at Leicester. This rate was reduced to* 1s. 7½*d. per hour from* 1*st March, within the limits of operation of this agreement, to which the National Joint Council for the Building Industry was not a party.*]

EASTERN COUNTIES :—

Grade A2.—Brentwood, Norwich, St. Albans, Southend, Westcliff-on-Sea. **Grade A3.**—Bedford, Cambridge, Colchester, Hatfield, Hemel Hempstead, Ipswich, Luton. **Grade B.**—Felixstowe, Hertford, Hoddesdon, Sible Hedingham, Ware. **Grade B1.**—Baldock, Biggleswade, Braintree, Chelmsford, Clacton, Frinton, Great Yarmouth, Halstead, Hitchin, Letchworth, Lowestoft, Newmarket, Sawbridgeworth, Silver End, Stevenage, Walton. **Grade B2.**—King's Lynn. **Grade B3.**—Attleborough, Aylsham, Bishop's Stortford, Cromer, Dunstable, Ely, Leighton Buzzard, March, Much Hadham, Mundesley, North Walsham, Puckeridge, Royston, Southwold, Standon, Tring. **Grade C.**—Aldeburgh, East Dereham, Halesworth, Leiston, Saxmundham, Wymondham.

[NOTE.—*Under an agreement arrived at by the National Joint Council for the Plastering Industry, a rate of* 1s. 7*d. per hour had previously been fixed for plasterers at Norwich, and a similar rate had been fixed at Cambridge by agreement between the local employers of plasterers and the local branch of the National Association of Plasterers, Granolithic and Cement Workers. It is understood that this rate remains unaltered within the limits of operation of the agreements, to which the National Joint Council for the Building Industry was not a party.*]

SOUTHERN COUNTIES :—

Grade A1.—Gravesend. **Grade A3.**—Ashford (Middlesex), Addlestone, Bournemouth, Brighton, Chertsey, Cobham, Eastbourne, Egham, Eastleigh, Gosport, Leatherhead, Maidenhead, Oxford, Portsmouth, Reading, Slough, Southampton, Staines, Weybridge, Windsor and Eton, Wycombe. **Grade B.**—Abingdon, Amersham, Ascot, Beaconsfield, Chalfonts, Gerrards Cross, Henley, Redhill, Reigate, Tonbridge, Tunbridge Wells, Wokingham. **Grade B1.**—Bexhill, Bracknell, Chatham, Chesham, Dorking, East Grinstead district (including Ardingly, Charlwood, Crawley, Crowborough, Cuckfield, Haywards Heath, Lingfield, Turners Hill), Fareham, Gillingham, Godalming, Guildford, Maidstone, Marlow, Rochester, Sevenoaks, Wallingford, Winchester, Woking. **Grade B2.**—Basingstoke, Bramley, Canterbury, Chichester, Cranleigh, Deal, Dover, Folkestone, Grayshott, Haslemere, Hastings, Horsham, Isle of Thanet, Littlehampton, Newbury, New Forest, Witley, Worthing. **Grade B3.**—Andover, Arundel, Ashford (Kent), Aylesbury, Bognor Regis, Burgess Hill, Faringdon, Fenny Stratford, Herne Bay, Isle of Wight, Midhurst, Mortimer, Newport Pagnell, Pangbourne, Stony Stratford, Tenterden, Wantage, Winslow, Witney. **Grade C1.**—Staplehurst.

SOUTH-WESTERN COUNTIES :—

Grade A.—Bristol, Keynsham, Portishead. **Grade A2.**—†Dartmouth, *Exeter, *Gloucester, Torquay (*see note below*). **Grade A3.**—Bath, Cheltenham, *Tewkesbury. **Grade B.**—*Hereford, *Ross-on-Wye, *Swindon, Weston-super-Mare. **Grade B1.**—Barnstaple, Bideford, *Swanage (labourers, 1s. 0¾*d.*), Taunton, Torrington. **Grade B2.**—Bridgwater, *Buckfastleigh, *Budleigh Salterton, *Cirencester, Exmouth, Redruth and Camborne, Thornbury, *Wellington, *West Gloucestershire, *Weymouth, *Yeovil. **Grade B3.**—*Bradford-on-Avon, *Calne, *Cheddar, *Chippenham, *Devizes, *Melksham, Midsomer Norton, *Trowbridge, *Westbury. **Grade C.**—*Bromyard.

[NOTE.—*The National Joint Council has authorised "exceptional rates" of* 1s. 7*d. for craftsmen and* 1s. 2½*d. for labourers at Torquay for a period of twelve months from* 1*st February*, 1930. *Plymouth, Newton Abbot and Paignton are omitted from the above list owing to lack of confirmatory evidence in regard to the current rates.*]

SOUTH WALES AND MONMOUTHSHIRE :—

Grade A.—Aberavon, Ammanford, Barry, Bridgend and Porthcawl, Burry Port, Cardiff, Gorseinon, Llanelly, Maesteg, Neath, Newport, Ogmore and Garw, Pontardawe and Swansea Valley, Port Talbot, Swansea. **Grade A1.**—Aberdare, East Glamorganshire and Monmouthshire Valleys (including Caerphilly, Abertridwr, Singhenydd, Bargoed up to Rhymney Bridge including Bedwas), Ebbw Vale district (including Tredegar, Brynmawr, Nantyglo, Blaina and Abertillery), Merthyr Tydfil, Pontypridd, and Rhondda Valley district, Pontypool district (including Blaenavon, Abersychan, Pontnewynydd, Panteg), Sirhowy Valley (Abercarn, Newbridge, Cwmcarn, Crumlin, Blackwood, Pontllanfraith, Crosskeys). **Grade A2.**—Chepstow. **Grade B.**—Brecon, Carmarthen, Llandilo. **Grade B3.**—Pembroke, Pembroke Dock.

SCOTLAND :—

Grade A.—Aberdeen (except labourers), Airdrie, Alloa, Ayr, Bell-hill, Bridge of Weir, Burntisland, Coatbridge, Dalkeith, Dumbarton, Dundee, Dunfermline, East Lothian, Edinburgh, Falkirk, Glasgow (*see note below*), Gourock, Grangemouth, Greenock, Hamilton, Irvine, Kilmarnock, Kirkcaldy, Leith, Leslie, Leven, Methil, Motherwell, Paisley, Perth, Port Glasgow, Rothesay, St. Andrews, Stirling, Wishaw. **Grade A2.**—Arbroath, Brechin, Dumfries, Hawick, Jedburgh, Maxwelltown, Montrose.

[NOTE.—*The Scottish Regional Joint Council has agreed to the operation of an "exceptional rate" until* 31*st January*, 1931, *in the Glasgow district of* ½*d. per hour above Grade A, to take effect from* 25*th March for joiners and* 31*st March for other classes. The rates quoted do not apply to bricklayers employed by members of the Scottish Building Contractors' Association in the Glasgow and West of Scotland district (whose rate, formerly* 1s. 8½*d. per hour, has been reduced to* 1s. 8*d. from* 1*st April), while in the case of masons and labourers employed by members of the same Association the rates remain at* 1s. 7½*d. and* 1s. 2¾*d. per hour respectively. The rates payable to painters remain unaltered at* 1s. 8*d.*, 1s. 7*d. and* 1s. 6*d. for Grade A, B, and C districts respectively, under an agreement arrived at by the Scottish National Painters' and Decorators' Joint Council to which the National Joint Council for the Building Industry was not a party; and the rate for plasterers in most large towns was reduced to* 1s. 8*d. per hour from* 1*st February.*]